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ORIGINAL LECTURES.

PERCUSSION AS A MEANS OF DIAGNOSIS OF PNEUMOTHORAX.

A Clinical Lecture, delivered October 17, 1888.

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I desire to present this case in order to give prominence to some diagnostic features of percussion as a means of diagnosis of pneumothorax.

This colored woman entered the hospital, October 5, 1888; she is twenty-eight years old, of healthy parentage. Her father is living at seventy-five years of age, her mother died in childhood. She has had a pretty severe cough for the last three months with muco-purulent expectoration occasionally streaked with blood. She has also had night-sweats. This history without doubt tends to indicate that she has had pulmonary disorder for some time.

On admission she complained of cough and great dyspnoea. This symptom was marked—the respirations the day after admission having ranged from 52 to 70. Temperature October 5th was 100.3°, but on the 6th it suddenly rose to 104°, at midnight had fallen to 98°, and since then the temperature has presented a daily range from 98° in the morning to 102° in the evening. The cough has been constant and attended by the expectoration of abundant muco-purulent matter.

The diagnosis of this case from the outset demanded the consideration of some acute thoracic mischief in lungs or heart. On auscultation the breathing was audible as a harsh but distant murmur over the anterior and dorsal walls of the right thorax attended with a slight metallic tinkle on coughing, which contrasted markedly with the exaggerated quality of the vesicular murmur over the left side of the chest. The mobility of the right side of the chest was reduced, but its contour was not modified nor were the inter-spaces effaced. Palpation was negative. Percussion, however, was markedly suggestive and I would even claim for it a diagnostic importance in a large proportion of cases of pneumothorax. The physical sign on percussion to which I allude is essentially that described originally by Trousseau, who says, "on applying the ear to the posterior wall of the chest on the affected side, and having percussion made in front by an assistant striking a metallic pleximeter with a hammer or a piece of money, a sound may be elicited similar to that produced by striking an empty barrel, or, still more, that produced by striking a bronze vase." This phenomenon was casually pointed out by Laennec, but from the frequency with which I have made the demonstration to physicians to whom it has seemed a novelty or even a trick, I am persuaded

that the diagnostic value of this variety of percussion-resonance has been largely overlooked.

When percussion is practised in a case of pneumothorax, the sound elicited must be tympanitic or hollow. The pitch is lower than the tympanitic sound of most cavities; it is lower than the pitch of stomach tympany for the obvious reason that the pleural air sac is large, its walls are tense, consequently the vibrations of the pulses of air occur in long curves, rendering the sound a good example of a low-pitched tympanitic note. Yet in certain cases the vibrations of the pulses of air may be so short that the pitch of the tympanitic sound becomes high enough to render the sound dull to an unpractised ear. It is because it is difficult to interpret correctly the significance of the tympanitic note in these cases that so much stress must be laid on the metallic percussion.

The special characteristic of the sound is elicited when a metallic plexor and pleximeter are used. Two ordinary coins will suffice for this purpose. When these are struck in the open air, only a dull metallic sound can be developed, but when used over a pneumothorax and in case there is a patulous opening through the visceral pleura, and if auscultation is practised while an assistant performs percussion by means of the coins, a beautifully clear, ringing, metallic sound will be heard. This sound does not occur in cases of pneumothorax when the fistulous orifice in the visceral pleura is closed, or in empyema with fistulous external opening. This percussion note is then chiefly characteristic of pneumothorax while the opening in the visceral pleura is still patulous. It sometimes happens that the fistulous orifice may be temporarily closed by a flake of lymph forming over the opening, when the specific metallic character of the percussion sound will vanish. It is possible to bound accurately the area of pneumothorax as the specific note disappears when the margin of the lung is percussed.

This metallic tinkle on percussion after the manner described has never been present in any case of intrapulmonary cavity which I have studied. In cases of old pleural adhesions on the left side, the stomach may be distended with gas, the fundus of this organ will enter the left inferior axillary region and it is, under these circumstances, possible to recognize the metallic timbre of the percussion note. This possibility of error may be quickly refuted by asking the patient to drink a glass of water. The tinkle produced as the water falls into the stomach can be readily detected if auscultation is carried on during the act of drinking. If the pneumothorax is local and sacculated by adhesions between the visceral and costal pleura, this sign, on percussion, becomes of especial importance, since the ordinary percussion note may be so high-pitched that its quality may be imperfectly defined and the resonance dull.

Metallic percussion of the variety just described was present in this patient's case from the first day of the occurrence of the pneumothorax, and it formed the

pivotal consideration in establishing the nature of the case. The absence of dulness and the absence of bronchial breathing on the side evidently the location of the thoracic mischief excluded pneumonia; while the patient's physical appearance and history, imperfect though it was, indicated that the present condition had been antedated by a pulmonary process.

The development of the symptoms of this case is also instructive, since they show that when a pneumothorax has once occurred, several days may elapse before the full characteristic series of symptoms are manifested. It is obvious that the ingress of air has widened the affected side and produced the aspect of rotundity; the interspaces have also been effaced. The chest is motionless, respiration diaphragmatic, the liver displaced downward, and the heart pushed markedly to the left of its usual place in the præcordia. To-day if percussion be practised over the lower zone of the right chest in a line one inch below the angle of the scapulæ, an entire flatness has replaced the tympany; the level of this dulness is sharply defined by the tympany above, and the metallic note from the coins is not recognizable. On sharply moving the patient the Hippocratic succussion-splash clearly shows that the condition is now hydro-pneumothorax. There are no general symptoms to indicate the presence of pus, and no positive physical sign of this character of pleural effusion exists except through the withdrawal of pus by paracentesis.

Differential Diagnosis.—Pneumothorax is almost always unilateral; cases of bilateral pneumothorax have been described, but they are so unusual as to be among the curiosities of medical literature. From unilateral emphysema contrast in pneumothorax the suppressed respiratory murmur, the existence of the metallic tinkle on auscultation, and the metallic note on auscultatory percussion. Since the pneumothorax is commonly associated with the formation of fluid which is either serum or pus, the condition known as hydro or pyo-pneumothorax usually develops and succussion-splash will be the characteristic phenomenon. The displacement of the viscera in pneumothorax differs from general emphysema and the percussion pitch is lower and the tone more hollow. Finally, the antecedent history of cases of emphysema differ widely from those of pneumothorax.

The prognosis in pneumothorax is very serious, the mortality being reported by Potain as eight cases out of eleven—three were cured. West, of Heidelberg, reports forty-six cases; forty-four died, two cured. The issue of the cases is always doubtful because the primary disease in most instances is phthisis, and from the tendency of the pneumothorax to become pyo-pneumothorax. When the first few days after the accident has occurred are passed in safety the duration of the case may be months or even years. A patient recently died in this hospital whose case was the subject of demonstration before this class for two years. Laennec reported one case in which the patient lived six years.

Démarquay and Marotte have shown the innocuousness of air injected into the pleural space and Potain has recently advocated the injection of sterilized air as a method of treatment of this disorder; so that in those rare cases in which pneumothorax has occurred from other causes than pulmonary phthisis, if the accident is not immediately fatal the prospect of recovery may be entertained.

The treatment is chiefly palliative, at the time of the

shock; stimulants to sustain the action of the heart and respiration, may be employed, and hypodermatics of morphia to lessen pain. When the area of pneumothorax is small an effort should be made, as soon as the acute symptoms have subsided, to compress the affected side by adhesive strips applied so as to lap the unaffected side, and by limiting chest movement to help secure union between the visceral and costal pleura. This plan of treatment, however, is usually insupportable to the patient and must be abandoned. If an excess of fluid exist, paracentesis should first be practised before strapping the chest.

Potain recently reported three cases of pleural effusion consecutive to pneumothorax of tubercular origin successfully treated by injection of sterilized air into the pleural cavity by the following method. A needle similar to that of a hypodermatic syringe, attached by a fine rubber tube to a reservoir of air which has been sterilized by being passed through a strong carbolic solution and then through cotton, is introduced into the sixth intercostal space while the trocar of an aspirator is plunged into the seventh. The air is then allowed to flow in as rapidly as the fluid escapes, its flow being regulated by means of a clip on the tubing so as to obtain about a normal intra-pleural pressure of six to seven millimetres of mercury as shown by the small metallic manometer attached to the aspirating apparatus. At each operation all the fluid was withdrawn and it was repeated as often as the chest refilled; in one case four, and in another five times. The operation was attended by no discomfort apart from the introduction of the needles, and was followed by great relief from all urgent symptoms. The final results were eminently successful: in all three cases the pneumothorax was cured without retraction of the chest, and in two the phthisical process was arrested. In the third case both lungs were affected and the disease which seemed checked for a time went on to a fatal termination. This method is only applicable when the effusion is serous or sero-purulent and not fetid, and should be deferred until the fluid has become either inconvenient from its weight or dangerous from its volume; it is contra-indicated if there is a large communication with a bronchus. The advantages of the operation are, that the dangers from a large quantity of fluid in the pleural cavity are avoided as well as those arising from a rapid evacuation of a large effusion; that the serious inconveniences of frequently repeated punctures are avoided and the lung is allowed the possibility of slow and progressive expansion. Finally, the cicatrization and cure of tubercular lesions seem to be favored by keeping the affected lung for a long time at rest.

I have described this mode of treatment in detail as reported originally in the *Bull. de l'Acad. de Méd.* of November 17th, and in the *Boston Med. Journal* of September 6th, because it seems a practical method and well worthy of trial. If the original opening in the visceral pleura can be closed, gradual expansion of the lung with obliteration of the pleural sac by adhesions is all that can be expected.

November 7th, the general condition of the patient has improved, the temperature has ranged between 98° and 100° for a week past, respirations 40 to 50, pulse 108, but little cough or expectoration, and increasing strength. The amount of fluid in the pleural sac has increased slightly within the past week, being now bounded above by the angle of the scapula.

ORIGINAL ARTICLES.

EXPLORATORY TREPHINING AND PUNCTURE OF
THE BRAIN ALMOST TO THE LATERAL
VENTRICLE.

*For Intracranial Pressure supposed to be due to an Abscess
in the Temporo-sphenoidal Lobe. Temporary Improve-
ment; Death on the Fifth Day; Autopsy:
Meningitis with Effusion into the
Ventricles.*

WITH A DESCRIPTION OF A PROPOSED OPERA-
TION TO TAP AND DRAIN THE VENTRICLES
AS A DEFINITE SURGICAL PROCEDURE.

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EMMA S., aged fourteen years. Eight years ago Dr. John L. Yard first called me in consultation to see her. She then had hip-joint disease on the right side, from which she recovered with a straight leg, though ankylosed, after about three years of treatment. Later she had several scrofulous outbreaks. Six months or more ago her left ear began to discharge, and this has continued ever since. Her general health also has failed, and in spite of her summer holiday in the country she has returned thinner and paler than usual. About two weeks before I saw her she commenced to have pain in her head with some mental dulness, cerebral vomiting, and moderate fever; temperature 99.6° to 101.6°. Soon some little trouble with her speech developed.

I first saw her September 30, 1888, at 8 P.M. Her temperature was 101°; pulse 72; resp. 16. She had vomited food without nausea for several days. She had had headache for several days, but can scarcely localize it accurately. She had had no chill, no convulsions, and no photophobia. Tapping on the left side of the head scarcely elicits pain at any point, but pressure developed distinct tenderness over an area of about two inches in diameter above and in front of the left ear. There is no œdema of the scalp either at this point or elsewhere. The mastoid is entirely free from pain, tenderness, swelling, or œdema. The child has double vision. There is no ptosis. The tongue, when protruded, deviates slightly to the right. The speech is thick. It is difficult to say whether this is due to some ataxic aphasia, or, possibly, to some paralysis of the tongue. The breath is quite fetid. The internal and external jugulars show no tenderness or hardness. There is no word-deafness; unfortunately, word-blindness was not sought for. The left pupil is much larger than the right and is sluggish in its reaction to light.

Mentally she is rather dull and uncomplaining, in marked contrast to her usual disposition. She has had no irritability.

Oct. 1, 2 P.M. Her intelligence has diminished very much—e. g., she seems to apprehend the command to lift her hand, but not to protrude her tongue, and otherwise is very dull, though not sleepy. She has not spoken a word to-day, and

only replied "yes," in thick speech, to the many questions we asked her.

Dr. Howard F. Hansell saw her with us to-day, and reports that the vision is unimpaired; the eye-ground shows the veins much congested on both sides, but more marked on the left than on the right, and rapidly developing choked disks. The squint was ascertained to be due to paralysis of the left external straight muscle. The left membrana tympani was destroyed and the canal filled with pus; no dead bone could be discovered. The hearing, unfortunately, was not tested by the watch, but for conversation was only moderately impaired apparently; abdominal reflex was absent; knee-jerk on the left side more marked than the right, but both of them below the normal. She has to-day passed water involuntarily in bed.

Diagnosis.—Intracranial pressure, arising probably from abscess in the temporo-sphenoidal lobe with pressure on the left sixth nerve, and, possibly, on the base of the third frontal convolution. Exploratory trephining was recommended and accepted readily by her parents.

2d. Her condition has to-day grown rapidly worse, as compared with yesterday. She is unconscious, with sordes on the lips and teeth. Last night Dr. Yard prepared her head for operation in the usual way (see the *American Journal of the Med. Sciences*, October, 1888, p. 335), but by an accident he was not able to take the temperature on the two sides of the head.

Operation.—2.15 P.M. Present, Drs. Yard, W. J. Taylor, H. F. Hansell, M. J. Lewis, and Louis Jurist. The operation lasted from 2.45 to 3.32 P.M. No spray was used. During etherization the respiration was shallow and diaphragmatic, so much so, that Drs. Yard and Jurist, who had charge of the patient, sent for me to the room in which she was being etherized, being doubtful whether it was wise to go on. During the operation the pulse was 124, almost too soft to count. Only one-quarter of a pound of Squibb's ether was used.

The ear was first cleaned and filled with boric acid, I then selected a spot three-quarters of an inch in front of the meatus and an inch and a half above Reid's "base-line" (a line drawn backward from the inferior border of the orbit, through the middle of the meatus, and extended to the occiput), as the place for trephining. I made a small incision through the skin and marked this point with a bone gouge, and then made a flap two inches in diameter with the convexity looking upward, so as keep the most favorable blood supply. The set-screw of my one-inch trephine broke, and I was compelled to use a half-inch trephine, which proved to be quite sufficient.

As soon as the button of bone was removed the dura bulged into the opening distinctly. It pulsated, was very tense and elastic to the touch, and its color was dark. Dr. Morris J. Lewis made the following notes of what was done. I plunged a hypodermatic needle of moderate calibre through the dura, downward and a little forward, to the depth of an inch. Some serum was drawn into the glass barrel of the syringe, but as no pus came the

syringe was thrust half an inch further. The suction on it was only ten minims. Small fragments of what I thought was curdy pus were now drawn into the syringe. Subsequent investigation, however, showed this to be some white brain tissue.

1. The dura mater was now opened by a small crucial incision, as I did not intend to close it later. The brain substance immediately bulged to a considerable extent and pulsated.

2. The needle was next introduced directly transversely about one and a quarter inches, but no pus flowed.

3. A grooved director was now substituted for the needle, and was pushed downward and backward to the depth of one and a half inches, till it impinged on the petrous portion of the temporal bone.

4. The grooved director was introduced almost directly downward, till the bone was struck at the depth of one and a quarter inches.

5. The director was next introduced forward, inward, and slightly upward, in the direction of the sella turcica, for a distance of one and three-quarters inches. In this child it almost reached the apex of the temporo-sphenoidal lobe.

6. The grooved director was next introduced downward, and a little forward, till it struck the bone at two inches. No pus was found in any of these six punctures.

7. Thinking there might be an extra-dural abscess, a periosteum elevator was now introduced between the dura and the skull directly downward, until the bone was reached. No pus was found.

The incision was then extended directly backward, and a half-inch button was removed at a point one and a half inches above the base-line, and one and a half inches behind the meatus. The dura was not so dark, nor did it bulge so much, nor was it so tense as at the first trephine opening. The needle was introduced forward, downward, and slightly inward, to the depth of one and a half inches, and, secondly, almost directly transverse, but no pus was found. The dura here was not opened.

I next drew down the flap, and examined the mastoid foramen, but could find no evidence of pus. As the symptoms and physical signs did not point to the cerebellum, I did not trephine there, though I contemplated so doing for a few minutes. I was so convinced that the intra-cranial pressure was due to fluid, and that that fluid was pus, that I introduced a drainage tube transversely, and a little upward, to the depth of one and a half inches, through the first trephine opening, to favor its escape by affording a path of least resistance. The flap was buttonholed for the exit of this tube, and held it firmly in place. Horsehair was placed under the flaps, and catgut sutures introduced. The buttons of bone were, of course, not replaced, nor the dura sewed. A dry sublimate dressing was applied, and the ordinary recurrent bandages used. She was placed in bed in a good physical condition.

Toward the close of the operation the child's respiration was almost entirely diaphragmatic and irregular, somewhat resembling the Cheyne-Stokes type, but not at all marked. In none of the punctures were there any convulsive movements of the

right side of the body, other than those that were partially voluntary. Every puncture by the hypodermatic needle sucked up some fragments of white brain-tissue into the syringe.

10.30 P.M. Her condition was very much as it had been the day before the operation. Temperature 101.6°. There has been but slight oozing from the wound. She had taken milk with a little brandy every twenty minutes without any difficulty. She was not entirely unconscious. She had taken up a piece of newspaper lying on the bed, and seemed to make an attempt to look at it, but otherwise she had not shown consciousness. She passed water involuntarily once.

3d. Morning (first day after operation). The moment I saw her when I entered the room I was struck with the improvement in her appearance. Her eyes were open and she took notice of what was going on around her. She had repeatedly taken a tumbler of milk in her own hands and drunk it. Temperature normal. No inference could be drawn from the pupils as the effect of the atropia had not passed off. At the dressing of the wound she showed appreciation of pain. The wound could not look better. A small amount of oozing and some small flakes of brain tissue were on the dressing, but no pus. The wound was redressed more for the purpose of observation than for surgical reasons. She was in every respect better than at any time since I first saw her. Her squint was still preceptible.

3d. Evening. Her intelligence is better than in the morning. When I said "good-bye," she held out her hand. She takes fair nourishment. Recognized her mother and tried to talk. Has passed no water since 5 A.M. Lithia water was ordered.

4th. A.M. (second day). Mind not quite so clear as last evening; she noticed the blood-stains on her night-dress, which seemed to cause her distress. Has had no sleep, and has been somewhat restless. Passed water twice. Temp. 100.6°, pulse 120.

10.30 P.M. Temp. 102.4°, pulse 163. Quite drowsy, and took no notice of change of night dress. Passed water twice since this morning. Slept four hours this evening. Took some milk.

5th. 12 M. (third day). Restless all night, no sleep till 5 A.M., since then has slept considerably. Passed water three times in the night. Temp. 103.7°, pulse 150. Dressing changed. The wound looks perfectly well; no discharge; drainage tube removed.

7.15 P.M. Rather more intelligent during the afternoon. An enema moved the bowels freely; shook hands with Dr. Yard when he came in; took no nourishment; passed water twice. Temp. 103.2°, pulse 153.

6th. 10.25 A.M. (fourth day). Has taken very little nourishment; passed water twice; almost comatose; breathing labored. Temp. 104.8°, pulse 172.

6 P.M. Gradually sank and died at this hour.

Post-mortem, Oct. 8th, forty-five hours after death. The wound was well united, though the flaps were easily torn apart. There was no meningitis apparent on removing the skull cap. The bloodvessels were somewhat dilated, those on the right side rather

more than those on the left. Slight oedema was noticed in the track of the middle cerebral vessels. On lifting the frontal lobes a great deal of oedema was noticed which obscured the cerebral substance around the peduncles and pons and was so marked over the medulla and cord that they could not be seen until the fluid had escaped, which it did immediately upon removal. Then, saving some injection of bloodvessels, the brain substance and membranes appeared nearly healthy. The oedema extended distinctly to the fifth, to the auditory and facial nerves, and to a less extent also to both optic nerves, all more marked on the left side. There was not the slightest adhesion at any point, either at the trephine openings or on the under surface of the brain; no false membrane.

At the second trephine opening, the point where the two punctures were made was barely recognizable on the cortex, not the slightest adhesion or inflammation being observed. The posterior puncture was through the middle temporo-sphenoidal convolution at its upper border; the anterior in the superior temporal convolution. The point where the drainage tube had been inserted through the first trephine opening was patulous. It was not, however, surrounded on the external surface of the cortex by any evidences of inflammation.

Transverse sections of the brain were now made, beginning with the cerebellum, which was perfectly healthy at every point. The sections crossing the track of the drainage tube showed not the slightest trace of inflammation surrounding its track. Only the portion of the brain tissue immediately in contact with the tube was slightly discolored, and possibly softened to a depth of not over one-sixteenth to one-twentieth of an inch in thickness. The length of the drainage canal in the brain itself was one inch. *The internal extremity was within one-quarter of an inch of the distended left ventricle.*

The sections of the brain were made about one-third of an inch apart, and showed entirely healthy brain tissue. Although observations were made with great care and each section cleaned by pouring water over its cut surfaces, not the slightest trace could be found of the punctures made by the hypodermatic needle or the grooved director; no laceration of the tissue; no effusion; no softening; no hemorrhage; nothing to give any evidence that the brain had been touched.¹ The lateral, third, fourth, and fifth ventricles were all very much dilated and filled with serum. The posterior horn of the lateral ventricle was three-quarters of an inch in diameter, and the third ventricle one inch in diameter. There was no inflammation of the dura at any point, not even in the track in which the periosteum elevator had been passed between the dura and the skull down to the bone. There was no caries of the petrous bone.

The only other organs examined were the kidneys. The left one was moderately congested, but normal in consistency; the right kidney normal in every

respect. A half ounce of urine was drawn from the bladder which was found to be albuminous. There was no oedema of the face nor other part of the body, which was very much emaciated before her illness.

Dr. J. P. C. Griffith made the following report on the specimens which were given to him for examination:

The membranes covering the medulla, and the portion of cord attached to it were much thickened, and adherent to the tissues beneath. Portions were carefully dissected off in water, stained in hæmatoxylin, and examined in glycerine. Under the microscope there were revealed the evidences of a tubercular meningitis; the tissues being thickened and infiltrated with lymphoid elements, while in certain portions tubercles could be distinctly observed.

REMARKS.—I have reported this case somewhat minutely on account, first, of the question of diagnosis, and, secondly, the surgical treatment. This last is extremely important as showing first that the brain can be explored thoroughly, repeatedly, and deeply without any apparent injury either to its substance or to its functions; and, secondly, that so far as this case enables us to judge, in cases of intracranial pressure and dropsy of the ventricles, it would be easy in the future to trephine and to tap the ventricles and give exit to the fluid, and possibly effect a cure, without doing any damage to the brain substance.

First, in the matter of the diagnosis, Dr. Yard and I recognized that the trouble was due to intracranial pressure, and the only question was the cause. My own judgment was decidedly in favor of abscess of the temporo-sphenoidal lobe, and for the following reasons:

A scrofulous child, purulent discharge from the ear for six months or more, sudden vomiting evidently cerebral, headache, a tender spot above and in front of the left ear and at no other point, possible aphasia, paralysis of the left sixth nerve, congestion of the optic papilla more marked on the left side, pulse normal, temperature while not normal or sub-normal, but little elevated until a little while before death.

Negatively, I excluded meningitis from the absence of delirium or delusions, the absence of photophobia, of contracted pupils, convulsions, and of facial twitchings, the absence of high temperature, no marked rigidity of the neck muscles, no prior irritability, no injection of the conjunctiva, no grinding of the teeth. I excluded abscess in the cerebellum from the perfect coördination of movements which always existed, and the entire absence of any localized symptoms of cerebellar disturbance. At the operation the examination of the mastoid foramen showed no evidence that the pus had travelled back from the petrous bone toward the cerebellum along the track of the

¹ In the discussion Dr. Osler stated that when examining the specimens with Dr. Griffith, after hardening in Müller's fluid, the line of the puncture was visible. In the first brain we could not see it.

lateral sinus. Although either the presence or absence of pus at this foramen is not a physical sign on which I would rely too much, yet taken with other signs it is probably of value as pointed out by Mr. Barker.

The motor region was excluded by reason of the entire absence of paralysis, the slight possible paralysis of the tongue being due more likely to the direct involvement of the seventh nerve, as it passed through the petrous bone.

Abscesses in the frontal and occipital lobes were excluded by their great rarity and by the absence of any local symptoms. Mastoid disease was excluded, as there was no oedema or other symptoms of local mischief. Abscess between the dura and the skull would probably have produced oedema of the scalp, which was absolutely absent, and the exploration at the operation demonstrated the non-existence of such an abscess. Plugging of the lateral sinus would have produced hardness and other signs in the internal and external jugular veins, and other symptoms of pyæmia. No such changes or symptoms were observed. It seemed, therefore, both by exclusion, as well as by positive evidence, that there was mischief on the left side, and almost certainly abscess of the temporo-sphenoidal lobe. The presence of pulsation at the trephine opening was extremely significant as against the diagnosis of abscess, and together with the elastic tension and bulging would be of the greatest value in enabling us to diagnosticate effusion into the ventricles. These means of diagnosis, however, are only of value during and not prior to the operation.

The results of the operation show that, saving for a slight disintegration of the brain tissue in a very thin layer round the track of the drainage tube, the cerebral substance was healthy. A most remarkable thing to my mind was the entire absence, even after the most careful search, of any evidence of puncture in the brain tissue.

In the various punctures I employed a hypodermic needle in four of them, and a grooved director in four others. When the dura is intact the syringe must be used, but it should be used with great caution on account of the suction, for, though I had a suction cavity of only seven to ten minims in the barrel of my syringe, yet the brain substance was sucked up into it every time. I cannot but think that the introduction of a grooved director would be safer and certainly, as shown by the post-mortem, did no more injury to the brain substance than the syringe itself, with its certain loss of tissue. The grooved director would allow pus or any other fluid to escape by its deep groove. The sharp point of the needle might readily puncture a vein, a large artery, a sinus, or possibly one of the large nerves, but the blunt end of the director exposes us to no such danger, and invites to a more extended and thorough exploration.

That this is not a merely theoretical objection to the needle is shown by Beck,¹ who relates a case of hemorrhage into the lateral and fourth ventricles as a result of its use, and by Dr. B. A. Watson, who tells me that in his researches on puncture of the heart as a therapeutic measure, such needle-punctures of the vena cava were invariably followed by hemorrhage. Even the introduction of a drainage tube into the brain, in a case operated on by Weir, has been followed by fatal secondary hemorrhage from injury to the middle cerebral vessels.² I believe that the grooved director might be fearlessly passed in until it touched the base of the skull, or to the falx or tentorium, provided that important cortical centres, the internal capsule, or the great basal ganglia, are not in its path. It is, I fear, only too probable that these structures would be an insuperable barrier to any such puncture; but even this is a question that can only be decided by trial—a trial, however, that should be most cautiously made, first upon animals and then upon man, and even then in the human subject only when forced upon us by circumstances. I am perfectly well aware that the tendency is to substitute the knife for the syringe, and that v. Bergmann has even formulated it as a rule. This, as an operative procedure, or for superficial exploration, has my entire assent. But for *deep* exploration I am convinced that we shall do less harm by the director; and that as it is less dangerous we shall be more thorough in our explorations with it, and so learn much more than by the knife.

In the use of any instrument, whether a grooved director or a needle, the greatest care should always be exercised to insert it in a direct line, and to withdraw it in the same line so as not, by a lateral sweep, to lacerate the brain substance.

PROPOSED TAPPING OF THE VENTRICLES AS A DEFINITE SURGICAL OPERATION.

As a result of my observations in the present case I would definitely propose in any similar case of dropsy of the ventricles, or of abscess in them, that tapping of them be done as a systematic operation.

In some very brief remarks at the late Washington Congress, I drew attention to the analogy between the cavity of the head and the cavities of the chest and abdomen. In the latter two we recognize various viscera, differing in functions and location, and recognized each by its own physical signs. We recognize, also, their diseases by symptoms and physical signs differing for each organ, and these differences enable us to diagnosticate disease of this or that viscus. In the cavity of the head we have recognized too much only one viscus—the brain. But, I argued, the various cortical areas or centres should be regarded as analogous to so many viscera,

¹ Bergmann: Chir. Behandl. Hirn Krankh., p. 52.

² THE MEDICAL NEWS, Oct. 6, 1888, p. 401.

fused into one mass physically, differentiated functionally. We can recognize disease of the arm, or face, or speech-centres by the differing locality of the lesions, and by the differing symptoms, as palsy of the face, or the arm, or aphasia, no less than by means similar we recognize diseases of the stomach, or liver, or kidney.

I would go further now, and draw a similar analogy between the serous membrane of the abdomen and that of the brain, and plead for a similar treatment for both in case of similar diseases. As we now open the belly and drain in tubercular peritonitis with such remarkable success, I would propose that we do precisely the same for the brain. That it can be done with precision and without serious injury to the cerebral tissues the history of the present case, I think, abundantly shows; that it is even *more* urgently necessary in the brain than in the chest or belly seems clear when we consider the relative effects of pressure in the two cases. In the chest or belly the walls are more or less yielding, and the viscera hollow or spongy, to a large extent. They can bear great and long-continued pressure with but little damage to their ultimate integrity, or to life, if the pressure be relieved within any reasonable time.

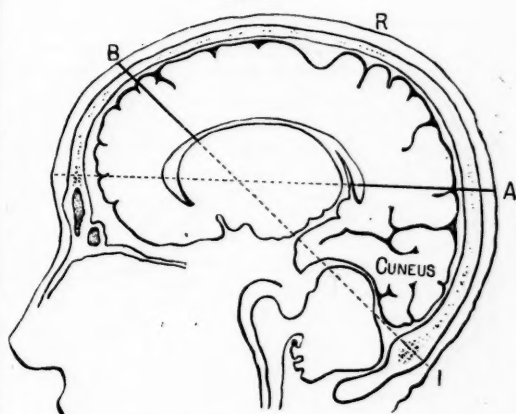
Not so in the cranium. The walls are rigid bone, and the brain can undergo but little pressure, and for a brief time (except it be gradual, as in chronic hydrocephalus) without inviting death. The fatal issue is so uniform that *any* means that holds out a reasonable hope of relief, even though it involve great risk to life, should at least be tried; and the proposal in the present paper seems, at least, to involve but a moderate danger to life with a reasonable probability of success.

It may be objected that much draining of cerebro-spinal fluid would be dangerous. I answer, first, we do not know till we try. Secondly, in my brain tumor case (*American Journal of the Medical Sciences*, Oct. 1888) there was probably a very slight wall between the cavity occupied by the tumor and the lateral ventricle. This wall subsequently ruptured, and gave exit daily to a quantity of cerebro-spinal fluid sufficient to wet an ample sublimate dressing continuously for three weeks. In Mr. Horsley's case of spinal tumor the same abundant drainage continued for a long time. In the *Comptes Rendus* (1888, cvi. 1693) Lucas Championnière reports a case in which no ill results followed such an abundant flow of the cerebro-spinal fluid as to wet the dressings, the pillow, and the bed. Such abundant and long-continued drainings do not, therefore, seem to be a danger. Thirdly, experience may show us that possibly in the head, as in the abdomen, simple evacuation of the fluid without its continuous drainage, may be not only feasible, but best. Of course, for pus in the ventricles the

drainage should be prolonged, if, indeed, so fatal a lesion allow of any treatment.

As to the technique, I have made some dissections and trials on the cadaver, with the help of Dr. Wm. J. Taylor, with the following results: We must avoid (1) the motor zone; (2) the neighborhood of the fissure of Sylvius, on account of the middle meningeal and middle cerebral arteries and their branches, and also because access to the ventricle can only be had here through the island of Reil and the basal ganglia. Hence, the first trephine opening in the present case should be rejected as unsuitable. But it must be remembered that it was chosen in this case not to puncture the ventricle, but the temporo-sphenoidal lobe. Only the wide distention and overlapping of the lateral ventricle, in fact, saved me from doing harm, I suspect, by my drainage tube. (3) We must avoid known sense-centres, and utilize, so far as other considerations allow, the so-called "latent zones."

FIG. 1.



(Drawn by Dr. John M. Taylor.)

Antero-posterior section of the head one-half inch from the middle line. R, fissure of Rolando; I, inion; A and B (solid), the lines of puncture, the dotted lines showing their imaginary continuation to the opposite fixed points.

Moreover, the way in which punctures are described in this present paper, and most others, is extremely inexact and unsatisfactory. The exact point of the trephine opening is noted, and then the puncture is described as "downward and forward," "forward and a little inward," etc. I propose to substitute for these loose descriptions, the exact point on the skull at which the line of puncture would emerge were it prolonged.

Provisionally, therefore, and until experience will show us better, I would propose three routes as practicable.¹

¹ Dr. Harrison Allen (*The American Journal of the Medical Sciences*, July, 1873, p. 224) proposed at autopsies to examine

I. Trephine half-way from the inion (the external occipital protuberance) to the upper end of the fissure of Rolando, half to three-quarters of an inch to either side of the middle line. Puncture toward the inner end of the supraorbital ridge of the same side (Fig. 1, A). The puncture will pass through the precuneus, and the normal ventricle will be struck at some point in the posterior horn at from two and a quarter to two and three-quarters inches from the surface of the scalp.

II. Trephine at one-third of the distance from the glabella to the upper end of the fissure of Rolando, and half to three-quarters of an inch to either side of the middle line. Puncture in the direction of the inion (Fig. 1, B). The puncture will traverse the first frontal convolution well in front of the motor zone, and the normal ventricle will be struck in the anterior horn at about two to two and a quarter inches from the scalp.

FIG. 2.



(Drawn by Dr. John M. Taylor.)

Transverse section of the head one and a quarter inches behind the meatus. The continuous line shows the line of puncture, the dotted line its imaginary continuation to the opposite side of the skull.

III. Trephine one and a quarter inches behind the meatus, and one and a quarter inches above Reid's base-line. Puncture toward a point two and a half inches directly above the opposite meatus (Fig. 2). The puncture will traverse the second temporo-sphenoidal convolution, and enter the normal lateral ventricle at the beginning, or in the course of the descending cornu at a depth of about two to two and a quarter inches from the surface.

the fluid in the ventricles "by a vertical incision made from the vertex of the brain about six lines to the outer side of the great longitudinal fissure," an incision that will always reach the ventricles, but would injure the motor centre.

I have endeavored to give these points for trephining less in inches than in proportionate parts between fixed points, which is the better method. In the third route the measurements are for an adult skull, and are to be somewhat reduced for children. The depth necessary for the puncture can only be stated approximately (a) on account of the point of emergence into the ventricle varying with slight differences in direction; (b) on account of different thickness of the skull, and overlying soft parts; and (c) variations in the diameter of the entire skull from youth to age, and also in different adults. All these are measurements to a normal ventricle. In a distended ventricle from effusion the distances would be proportionately less.

The posterior route has the advantage of better drainage. But whether this will be really an advantage is a question. Experience may prove that evacuation of the fluid without drainage may be best. It avoids the cuneus and will not therefore produce hemianopsia.

The anterior route has two disadvantages: first, the scar on the forehead, and, secondly, unless great care is used in directing the puncture and its depth, the corpus-striatum may be injured. Compared with the danger of the disease the first objection is slight, and in a distended ventricle the second would lessen *pari passu* with the degree of the distention. The advantages are that it is high enough to avoid the frontal sinus, injures no known centre, and if evacuation and not drainage be desired this will easily give it.

The lateral route has the great advantage that, in a case like the one here reported, in which there might be a reasonable doubt as to whether there was an abscess of the temporo-sphenoidal lobe, or dropsy of the ventricles, both explorations could be made from one trephine opening. It could either be made to favor drainage if dependent, or to hinder it by lying with the operated side up. It penetrates a possible centre for hearing of the opposite side, but as it has been utilized for puncture in a number of cases of abscess, in the temporo-sphenoidal lobe, and no ill result has followed as to hearing, this objection would seem to vanish. At the ventricular end of the puncture it has the danger of possible injury to the thalamus, but this, I suspect, in a distended ventricle would not be very great. On the whole, I should at present favor this route until we find a better one.

An inch or a half inch trephine opening having been made, the dura should be examined. If it pulsate, bulges in the wound, and is tense and elastic to the touch, it will confirm the diagnosis; should it be tense, elastic, and bulging, but not pulsate, abscess or tumor should be suspected and sought for. The diagnosis of dropsy of the ventricles having been confirmed, the dura should be incised conically

and the grooved director now be introduced in the direction, and about the depth above indicated, unless fluid is found more superficially. If the first puncture does not reveal fluid, a second or a third may be made. When found, it should be evacuated by the introduction of a dressing or hemostatic forceps. I should then introduce a drainage tube for twenty-four hours or more, according to circumstances. The rest of the treatment would be the usual one in brain cases.

**A STUDY OF SOME OF THE PYOGENIC BACTERIA
AND OF THE GERMICIDAL ACTIVITY OF
CERTAIN ANTISEPTICS.**

BY ROSWELL PARK, A.M., M.D.,

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At the present day, after the researches of Scheurlen, Rosenbach, and others, it seems hardly necessary to take any position in defence of the statement that there is no suppuration without the previous presence of some bacteria, and the writer prefers not to enter upon this part of the question at all; but there are a few points in connection with the action of pyogenic bacteria and their growth in the presence of the various antiseptics, to which he would like to call attention.

For present purposes we may speak of the three or possibly five varieties of staphylococcus, and the two varieties of streptococcus known to pathologists,

disregarding most of the other ten to fifteen forms of bacteria known to be concerned in the possible production of pus. The writer has been studying the physical properties of these two generic forms in connection with the clinical phenomena attending their appearance. His own researches have led him to agree thoroughly with Ogston as to the biological and pathological differences between these two forms. From his own researches he had about arrived at conclusions which had been already carefully summarized by Krantzfeld in a thesis published two years ago in Russian, but which had only recently come to his knowledge through translation. Without endeavoring to give all the facts upon which these conclusions are based, the essential items may be stated as follows: All the staphylococcus forms, including the pyogenes albus and aureus and the citreus albus and flavus, grow more rapidly than the streptococcus; they grow better in the absence of oxygen; they more easily enter the blood-current, and are by it more quickly disseminated; thus phlegmons caused by staphylococci pursue a more acute course both in time and in intensity of disturbance, and the various cases of septicæmia and pyæmia developed in consequence thereof seem to be of a more rapid or overwhelming character. In cultures the staphylococci remain active for a long time; old cultures of them emit a well-marked odor much like that of starch paste, as Krantzfeld has noticed, and this odor can be frequently recognized in old

TABLE I.

Disease.	Number of cases	Staphylococcus pyogenes albus.	Staphylococcus pyogenes aureus.	Staphylococcus citreus.	Staphylococcus ceruus albus.	Staphylococcus ceruus flavus.	Streptococcus pyogenes.	Bacillus pyogenes foetidus	Micrococcus tetragenus.	Streptococcus erysipelatosus.	Micrococcus scarlatine.	Bacillus scarlatine.	Bacillus abortens.	Micrococcus capsiformans.
Abscesses	18	13	11	2	5	...	2	1	1	...	...	...	...	...
Caries	2	2	1	...	1	...	1	...	...	...	...	...	...	...
Necrosis	2	1	...	...	1	2	...	...	...	...	...	...	...	...
Ulcers	3	2	...	...	2	...	2	...	...	...	...	...	...	...
Ulcer, syphilitic	1	1	...	...	1	...	1	...	...	...	...	...	...	...
Chancroidal pus	1	...	1	...	...	1	...	...	...	...	...	...	...	...
Pus from bubo	1	1	...	...	...	...	1	...	...	...	...	...	...	...
Discharge from chronic gonorrhœa	1	1	...	1	...	...	...	...	...	...	...	...	...	...
Pustules	2	2	1	...	...	...	...	...	...	...	...	...	...	...
Carbuncle	1	1	...	...	...	...	1	1	...	...	...	...	...	...
Phlegmon	1	1	...	...	...	1	...	...	...	...	...	...	...	...
Cellulitis	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	2	1	...	1	...	...	...	...	...	2	...	...	...	...
Felon	1	1	1	...	...	...	...	...	...	...	...	...	...	...
Empyema	1	1	...	...	...	1	...	...	...	...	...	...	...	...
Gangrenous phlegmon	1	1	1	...	...	...	1	...	...	...	...	...	...	...
Tetanus	3	3	1	...	1	...	1	...	...	...	...	...	...	...
Pyæmia	1	1	...	...	1	...	...	...	...	...	...	...	...	...
Hypopyon	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Not named	6	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	52	36	17	4	13	5	12	2	1	2	...	...	...	...
Scarlatinal blood	2	...	...	...	...	...	...	...	...	...	1	1	1	1
Cerebro-spinal meningitis (pus) .	1	1	...	...	1	...	1	...	...	...	...	...	...	...
Variola (pustule)	1	1	...	...	...	1	1	...	...	...	...	...	...	...
Vaccinia (vesicle)	1	...	...	...	1	...	1	...	...	...	...	...	...	...

TABLE II.

	<i>Staphylococcus pyogenes albus</i> .	<i>Staphylococcus pyogenes aureus</i> .	<i>Staphylococcus cereus albus</i> .	<i>Staphylococcus cereus flavus</i> .	<i>Streptococcus pyogenes</i> .	<i>Bacillus pyogenes foetidus</i> .	<i>Micrococcus tetragenus</i> .	<i>Bacillus of green pus</i> .	<i>Micrococcus eysipelatosus</i> .	<i>Bacillus of typhoid</i> .	<i>Pneumonia (Friedländer)</i> .	<i>Bacillus anthracis</i> .	<i>Yellow sarcina</i> .	<i>Micrococcus prodigiosus</i> .
Carbolic acid, 1 : 40	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	.....	No growth.	.....	No growth.	No growth.	No growth.	No growth.	.....
Iodoform, 1 : 100	Good.	Good.	.....	.....	Good.	Good.	.....	Good.	Good.	Good.	.....	Good.	Good.	Good.
Iodine, 1 : 500	No growth.	No growth.	Good	No growth.	Moderately good.	Moderately good.	.....	"	.....	.....	No growth.	No growth.	"	.....
Naphthalin, 1 : 100	Good.	Good.	"	.....	.....	Good.	Good.	"	Good.	Good.	Good.	Good.	"	Good.
Hydro-naphthol, 1 : 100	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	No growth.	.....	No growth.
Hydro-naphthol, 1 : 400	"	"	"	"	"	"	.....	"	"	"	"	"	No growth	.....
Resorcine, 1 : 200	"	Slight growth.	"	.....	"	"	.....	Very slight growth.	.....	"	"	Slight growth.	"	.....
Trichlorophenol, 1 : 100	"	.....	.....	.....	.....	.....	.....	No growth.	No growth.	"	"	No growth.	"	No growth.
Creolin, 1 : 200	"	Slight growth.	Good.	No growth.	.....	Good.	.....	Good.	.....	Good.	Good.	"	"	.....
Creolin, 1 : 1000	Good.	"	"	Good.	.....	"	.....	.....	.....	"	"	"	"	.....
Sulpho-carb- onate of soda, 1 : 100	"	Good.	"	"	Good.	"	.....	Good	.....	"	"	Good.	Good.	.....
Boric acid, 1 : 100	No growth.	.....	.....	.....	.....	.....	No growth.	No growth.	No growth.	No growth.	No growth.	.....	No growth.	No growth.
Oxide of zinc, 1 : 100	.....	Good.	.....	Good.	.....	Good.	.....	Good.	"	Good.	.....	Good.	Good.	Good.
Perchloride of iron, 1 : 1000	Good; dark- brown color deposit	Slight growth.	Good.	.....	Good.	"	.....	Good; black deposit.	Good.	Good; black deposit all along course of needle.	Good.	"	"	.....
Antipyrin, 1 : 100	Good.	Slight, not characteristic growth	"	.....	.....	.....	.....	Good.	.....	No growth.	No growth.	"	Slight growth.	.....
Antifebrin 1 : 1000	"	.....	.....	.....	.....	.....	No growth.	"	Good.	No growth.	.....	"	.....	Good.
Quinine, 1 : 200	No growth.	No growth.	.....	.....	No growth.	No growth.	"	Slight growth.	No growth.	"	No growth.	No growth.	No growth.	No growth.
Antipyrin, 2 : 1000	Slight growth.	.....	Slight growth.	Slight growth.	.....	"	"	.....	.....	.....	.....	.....	.....	.....

dressings which have become saturated with pus. The streptococcus forms grow more slowly, seem to require more oxygen, and manifest a disposition for the lymphatic vessels rather than for the blood-vessels; it is well known that the streptococcus erysipelatosus is propagated mainly in the lymphatic current.

Phlegmonous inflammations caused by streptococci are either of the nature of true erysipelas, when caused by its specific streptococcus, or take the form of a diffuse cellulitis, in which, if pus form, it does so more slowly. The phlegmons caused by the staphylococcus are usually localized, even if extensive, whereas those in which the streptococcus is found are quite likely to be connected with multiple

or somewhat distant abscess formations. For example, in a case of erysipelas or erysipeloid inflammation of the palm of the hand, we are quite likely to get an abscess in the axillary glands, a thing which would be quite uncommon if the staphylococcus-forms alone were at fault. With regard, however, to their powers of systemic poisoning there is, perhaps, but little difference; both may alike cause septicæmia and pyæmia—through the action of specific phlebitis and the dispersion of septic thrombi, or through a poisoning of the system by ptomaines. Nevertheless, when a systemic infection is caused by streptococci, the abscesses seem to be confined rather to the serous membranes; for example, Heubner's multiple infectious inflammations

of the serous membranes of children, and Volkmann's acute purulent synovitis. When this systemic infection is caused by staphylococcus, we see during the active period of growth—that is, during adolescence, that there is a tendency to inoculation of the pyæmic process in the bone, and then we have clinical manifestations of acute infectious osteomyelitis, whose acuteness and ravages in some cases are well known. One who has seen many of these cases will be quite likely to agree with Krantzfeld and Rodet, that acute infectious osteomyelitis represents a form of non-traumatic pyæmia.

During the past year and a half the writer has, in connection with his former assistant, Dr. Matzinger, carefully investigated the biological character of pus from fifty-two different patients, and presents below a table giving a summary of the results of his examinations. The method has been similar to that generally adopted, a drop of pus being removed on a sterilized needle at the moment of its evacuation, transferred to gelatine or agar, and then carefully developed through successive generations until its bacteria could be identified. Only one opportunity of examining pus from hypopyon presented itself. This has been of especial interest, because it has been stated by some writers that pus, in which bacteria were present, could not disappear spontaneously. In this particular instance the anterior chamber was tapped, and the pus evacuated was examined with the result given below. The anterior chamber, when filled with pus, was not further disturbed and the pus in time disappeared by apparent absorption.

Simultaneously with these experiments another series was carried on to see the inhibitory power of various antiseptic substances, either recent or old. Jellies were prepared containing the percentage or proportion of the drug experimented with, as stated below. The bacteria experimented with were the pyogenic and some of the other specific forms, as well as one or two of the chromogenic. The table presented herewith will show the result obtained after careful exposure and cultivation in the thermostat for a sufficient length of time. It will be observed that iodoform makes a very poor showing when studied in this light, and this leads me to reiterate a statement frequently made in other connections, that oxide of zinc has all the good properties of iodoform and scarcely any of its disadvantages. In every way in which I have tested it, I have found it to yield, experimentally and clinically, just as good, if not better results.

It will be seen also that hydronaphthol and boric acid appear to best advantage under these tests. This also bears out personal experience, since the writer has perhaps never been disappointed in the use of either of these drugs; while for nearly two years he has been using hydronaphthol solutions for

every purpose for which he previously used carbolic acid.

It is intended to make a further systematic study of other antiseptics, but it is hoped that these data will have a sufficient value to justify their publication before the list has been completely gone through with.

The results above reported were presented in slightly different form to the American Surgical Association at its meeting in September last.

THE TOE REFLEX.

By WHARTON SINKLER, M.D.,

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ABOUT two years ago I showed at the Philadelphia Neurological Society a patient in whom I demonstrated what I called "the great toe reflex." I had seen this phenomenon several times before and have since then studied it more fully.

The "toe reflex" is met with only in cases in which the knee-jerk, ankle-clonus, and other tendon "reflexes" are strongly developed. It is elicited in the following manner: The patient lying on his back with his legs extended, the observer grasps the great toe and flexes it strongly; there immediately follows involuntary flexion of the foot, then flexion of the leg occurs, and lastly, the thigh is flexed on the pelvis. Usually the whole limb returns at once to the position of extension. It seems to make no difference whether the toe be flexed suddenly or gently and gradually: in either case the same series of movements as above described follows. Flexing all of the toes at the same time causes the same result. The order and manner of the act are very much like the result of irritating the sole of the foot—"the plantar reflex."

I have recently studied this reflex in a case in which the question of the influence of pain is removed. The patient is a woman in the nervous wards of the Philadelphia Hospital, who has complete paralysis of motion and sensation below the sixth dorsal vertebra. There is an angular curvature at this vertebra, the result of a fall from a window. Below this point there is no sensation to pin-pricks, nor is there bleeding from the punctures. The knee-jerk is grossly exaggerated, but the ankle-clonus cannot be developed on account of the muscular rigidity. The plantar reflex is excessive on both sides. On flexing the toes, either the great toe alone or all the toes together, the foot is quickly and strongly flexed, then the leg is drawn up, and finally the thigh is flexed on the abdomen. The patient is entirely unconscious of the movement either by reason of pain or from any sense of the leg moving.

In lateral sclerosis, in which the knee-jerk is excessive, and in some cases of old hemiplegia, the "toe

reflex" is generally well marked; but it is most strikingly present in cases of pressure disease of the cord, either from injury of the spine or caries.

I have called this phenomenon a reflex because it has seemed to me like one, but it may in part be explained as the result of a tendon pull. For instance: Flexing the toe pulls on the flexors of the foot, which in turn contract, drawing the foot upward; but the flexion of the leg and thigh are not capable of the same explanation.

The "paradoxical muscular contraction" of Westphal somewhat resembles the toe reflex, but differs from it in many respects. The former is a contraction of a muscle after it has been suddenly relaxed. For example, if the foot is grasped and passively flexed on the leg, the tibialis anticus may contract and keep the foot flexed for some minutes.

MEDICAL PROGRESS.

Creolin-iodoform.—To render iodoform disinfectant and deodorant, JAKSCH, in No. 40 of the *Pharm. Post*, recommends admixture with creolin. One to two per cent. of the latter well rubbed up with iodoform makes a somewhat brownish powder of a mild aromatic odor, soluble in alcohol and in ether; water takes up the creolin, leaving the iodoform undissolved. This combination is applied to wounds, ulcers, abscesses, etc., with results at least not less favorable than from pure iodoform; it would seem as though this preparation would diminish secretion in a greater degree as well as stimulate the granulation process.—*Wiener medicin. Presse*, No. 42, 1888.

Gonorrhœa in the Female.—A useful article on gonorrhœa in the female is published in the current number of the *Lyon Medical*, by M. HORAUD. The remarks are based upon 5090 cases of the disease which had come under the observation of the author. Discussing the microbic origin of the disease, he says that Hallier, of Jena, in 1872, described a micrococcus in the gonorrhœal discharge, and even in the blood of patients who had been attacked with gonorrhœal rheumatism. But the honor belongs to Neisser of discovering, in 1879, the true microbe of gonorrhœa, and of pointing out the method of isolating it, and of proving its connection with the causation of the disease. To this microbe Neisser gave the name of gonococcus, which has since been retained. Every discharge from the urethra, vagina, uterus, anus, or the blood of the menses or the lochia, can occasion urethritis in man, but gonorrhœa only follows when the discharge contains gonococci. The purulent ophthalmia of newborn children is only of a gonorrhœal nature when it is contracted from a mother suffering from gonorrhœa; hence it is to be assumed that it is only in certain cases of ophthalmia neonatorum, in the pus of which gonococci will be found.

The author enters fully into the subject of how to collect pus for examination for the gonococcus from the female generative organs. Urethral gonorrhœa may persist a long time in women—some months, and even years. He has seen patients the pus from whose urethra

still contained gonococci at the end of four and ten months, and of two years, without reinfection having taken place to account for the disease. No cases of auricular blenorhagia, nor of nasal or buccal, had come under his observation. A short time ago, however, he published a note of urethral gonorrhœa in a man which had been contracted during a coitus *ab ore*. The woman from whom the contamination came, and who had lent herself freely to this kind of occupation, submitted to a minute examination, but no buccal lesion was detected, nor were there any traces elsewhere about her of gonorrhœa. The author concluded that the contagion had been derived from the gonococci deposited in the mouth during a previous coitus.

In the treatment of gonorrhœal discharges he speaks highly of nitrate of silver, both in solution and in the solid form. Even weak solutions of the drug of 0.30 of a gramme to 100 grammes of distilled water are successful in reducing old chronic discharges. From comparative trials which he has made of nitrate of silver and of sublimate solutions, both in cases of urethral gonorrhœa and purulent ophthalmia of infants, he is confident that the former drug is in every respect superior, and yields better results.—*Medical Press*, Oct. 31, 1888.

Treatment of Bright's Disease.—Avoid moist climates and sudden changes of temperature. Avoid highly seasoned food and eggs; pursue as far as possible the milk diet; cut off wine, beer, and brandy. SENATOR allows veal and pork, vegetables, fruit, and milk, but prohibits beef. Wine and water for a beverage.

SEMMOLA follows the preceding rules, with the addition of the following to be taken as a drink:

R.—Iodide of potassium	. . .	1 part.
Phosphate of sodium	. . .	2 parts.
Chloride of sodium	. . .	5 "
Water	. . .	1000 " —M.

BAMBERGER insists on milk diet exclusively and gives iron:

R.—Sulphate of iron,	
Bicarbonate of sodium,	
Extract of dandelion	. . . aa 5 parts.—M.

Make sixty pills, and give three in the morning and three at night.

He also prescribes quinine obtained from the infusion of Peruvian bark.—*Révue Général de Clinique Thérapeutique*.

The Removal of Warts by Carbolic Acid.—PROF. B. FRÄNKEL, in the *Wiener medicinische Presse*, Oct. 1888, recommends the following method for the removal of warts: The skin surrounding the wart should be covered with cotton, and thus protected. Then, by means of a glass rod, apply the liquid carbolic acid to the wart and allow it to dry. No pain is perceptible. In the course of two or three days a part of the wart will fall off. Renew the application until all has been removed.

Antipyrin as a Uterine Sedative.—WINDELSCHMID (*Allg. med. Ctrl.-Ztg.*; *Union Méd.*) prescribes enemata of thirty grains of antipyrin before or during menstruation in cases of dysmenorrhœa. In two obstinate cases he has known this treatment to prove particularly satisfac-

tory, three doses being given (at intervals of twelve hours between the first and second, and of twenty-four hours between the second and third). He notes profuse sweating and slight ischuria as among the inconveniences of the method, and adds that it has sometimes been necessary to give a glass of wine or milk to avert imminent collapse.

Rivière (*Gaz. Hebdom. des Sci. Méd. de Bordeaux; Union Méd.*) has found the same drug very efficient in allaying after-pains, in doses of fifteen grains by the mouth. A single dose proved enough in twelve out of twenty-eight cases, and two doses, at an hour's interval, in twenty out of thirty-eight cases. When it fails, he says, retention of the placental débris or the like is to be suspected. He states that the drug is not eliminated by the milk.—*New York Med. Journal*, Nov. 17, 1888.

Antipyrin in Diphtheria.—A case of diphtheria, in a child of five years, is reported as cured by the use of this drug locally. Although the classic treatment had been vigorously followed, and the throat carefully cleansed, the membranes spread and completely covered the pharynx. A solution of antipyrin in water, 10 : 100, was applied, the patient making a perfect recovery.—*Gaz. Hedomadaire des Sciences Médicales*.

Nephrectomy.—SCHMIDT, of Cologne, before the Surgical Section of the Sixty-first Congress of Naturalists, clearly and concisely reports Bardenheuer's results with nephrectomy from 1879 to 1888. During a period of time in which the kidney was extirpated thirty-five times, nephrotomy was performed but twice. This is explained by the fact that the radical operation was performed in twenty-three instances for tuberculosis, abscess, pyonephrosis, and pyelitis. Only in four cases was operation indicated by tumors; the kidney was removed in eight for hydronephrosis, cystic kidney, and injury to a ureter during amputation of the uterus. In the operation Schmidt recommends the single or double trap-door flap and packing, with subsequent secondary union. Eight patients died during the first two weeks, two later; in only one death is the operation said to have been responsible—on the other hand, a contracted kidney existed, so that nephrotomy was indicated. In two cases, sepsis, which was present before the operation, caused death, in one collapse; a child of three months died in thirty-six hours with convulsions, another from scarlet fever, one patient from metastatic carcinoma, one from amyloid degeneration. Both nephrotomies (for acute traumatic hydronephrosis and for pyonephrosis) terminated fatally.

In suppuration of the kidney (tuberculosis, abscess of the kidney, and pyonephrosis) there is mostly a typical form of perinephritic abscess forming between the adipose capsule and the kidney, so that the whole tumor assumes the shape of the organ; ulceration, externally, is rare in these cases, whereas the perinephritic abscess in a wider sense, suppuration of the capsule, is more likely to ulcerate through. Schmidt and Bardenheuer consider extirpation indicated in suppuration of the kidney, as this condition is the primary affection and the perinephritic abscess the secondary, and even at the operation it cannot usually be determined whether the abscess is simple or tubercular, or whether several foci of disease are present. Bardenheuer cuts directly through

the thickened capsule into the renal tissue and shells out the abscess, permitting the capsule to remain; by this means, on the one hand, infection is more readily prevented, and on the other the firm capsule prevents the walls of the cavity collapsing.

Pyelitis, hydronephrosis, and pyonephrosis have a common etiological relation to permanent or transient, total or partial closure of a ureter. The last condition is often occasioned by parametritis; if indurated masses are present, instead of catheterizing the ureter, this should be treated extraperitoneally. Should a ureter be cut in extirpating the uterus, the corresponding kidney should be removed by the lumbar incision. In the discussion, Sprengel, of Dresden, related that he had recently removed a large hydronephrotic kidney from a child of four months by lumbar incision conjoined with an incision at right angles, extending anteriorly. A cure resulted.

Krönlein objected to indiscriminate extirpation and accorded nephrotomy its proper position.—*Berlin. klin. Wochenschr.*, Oct. 15, 1888.

Expectorant Mixture.—

R.—Terpine 10 grammes.
Glycerin 60 "

Dissolve by the aid of gentle heat.

The dose is regulated by the amount of terpine it is desired to give, there being 15 grains of terpine to a spoonful of this mixture. It may be given in any syrup.—*Revue de Thérapeutique*, October, 1888.

Treatment of Sweating of Hands and Feet.—UNNA recommends for this affection, when the parts are cold, that before the patient goes to bed he should bathe the affected parts with hot water to which has been added some irritating substance, such as camphor, mustard, or vinegar. Then, after drying, the part should be enveloped in an ointment which will cause hyperæmia, such as one of turpentine and ichthyol, each five parts, to oxide of zinc ointment, ten grammes. In the morning the ointment is to be washed off and the parts are to be rubbed with ice-cold water, the friction being continued till hyperæmia and warmth of the skin are induced; then the skin is to be powdered with a powder containing mustard flour. If the feet are affected, the stockings should be powdered before they are put on. Where the parts are warm, the hot and cold baths are to be omitted and ichthyol is to be used; lukewarm baths in the evening, followed by two and a half per cent. ichthyol ointment, washing off with lukewarm water and ichthyol soap in the morning and leaving on some of the dry soap-suds, is the method of treatment.—*New York Med. Journal*, Nov. 17, 1888.

Glycerin Suppositories.—BOAS (*Pharm. Ztg.*, No. 80) recommends hollow suppositories of cocoa butter, to contain five to thirty minims of glycerin. In cases in which glycerin proves the appropriate remedy, fifteen minims suffice to produce a copious evacuation. The indication for the use of glycerin is atony of the large intestine, whereas, in cases of obstipation dependent upon atony of the stomach or upon defective digestion of the small intestine, other laxatives may take the place of glycerin.—*Munchener medicin. Wochenschr.*, Oct. 16, 1888.

A New Antiseptic.—From extensive researches and experiments, DR. BERENS concludes that the fluosilicate of sodium is a better antiseptic than chloride of mercury or phenic acid, for preventing the development of bacteria, and it is also a powerful deodorizer. He uses it in gonorrhœa in a 1 to 2 per cent. solution with a marked amelioration of symptoms in three days' time. The same success attends its employment in catarrhal conjunctivitis and purulent ophthalmia. He recommends its use in leucorrhœa, suppuration of the middle ear, and in mucous fluxes generally.—*Gaz. Hebdomadaire des Sciences Médicales*.

Incompatible Antiseptics.—The *Journal de Médecine de Paris* points out the incompatibility of the following commonly prescribed substances:

- Corrosive sublimate and iodine.
- Corrosive sublimate and soap.
- Phenic acid and iodine.
- Phenic acid and permanganate of potassium.
- Iodine and soap.
- Salicylic acid and soap.
- Salicylic acid and permanganate of potassium.
- Oil, soap, or glycerin, and permanganate of potassium.

Treatment of Sycosis.—UNNA, in the *Monatsschrift für prakt. Dermat.*, No. 11, 1888, gives his plan of treatment of folliculitis barbæ, or non-parasitic sycosis. He regards shaving as a very important part of the treatment. This is to be followed in bad cases by the constant application of his carbolic-mercurial or resorcin-plaster muslin; or, if the patient will submit to a nightly treatment only, a zinc-sulphur salve muslin is to be worn during the night, followed in the morning by epilation of the pustules, washing of the part, and the application of a five per cent. alcoholic solution of resorcin to each affected follicle. The whole series of his "reducing agents," such as sulphur, ichthyol, resorcin, pyrogallol, and chrysarobin, may be used at night in ointments of two to five per cent. strength, or ichthyol may be employed in ten per cent. strength as a fomentation. Mercurial ointment with ten per cent. of carbolic acid and up to one per cent. of sublimate is also useful. If the patient will not allow the beard to be shaved, it will be harder to cure the disease, and we must proceed by the removal of each affected hair, washing out the suppurating hair follicle, and the application to it of a zinc-sulphur or weak resorcin-sublimate salve. Scarification does harm, and general epilation should not be practised. Only the diseased hairs should be plucked out. The rhinitis which is often present should be treated by the nasal douche with a one per cent. solution of ichthyol. For some time after the disease is practically cured the face should be shaved with sublimate soap, each hair that is diseased should be plucked and the follicle touched with an alcoholic solution of resorcin, and every night the face should be anointed with a resorcin or sublimate ointment or paste.—*New York Medical Journal*, Nov. 17, 1888.

Contribution to the Study of the Influence of Antipyretics upon Diabetes.—DR. VOLKOFF (*Thèse de Petersburg*, 1888, and *Vratsch*, No. 27, 1888) undertook, in the clinic of Prof. Botkine, a series of experiments upon four dia-

betic patients, to prove the effect of various antipyretics upon this malady, with the following results:

Antipyrin, administered to these four patients gave excellent results, namely diminution of thirst and of the amount of sugar and urea eliminated—in short, marked improvement.

Acetanilide, given to three patients had no effect whatsoever; as much as sixty grains a day were taken.

Sulphate of thallin, administered to the same patients who were given antipyrin, and in the same doses, diminished the amount of sugar, but for a short time only.

Phenacetine, taken in the same doses of twenty grains, proved ineffective.

Salol, given to one patient in twenty grain doses, three times daily, diminished thirst, and the amount of sugar and urea very perceptibly.

Volkoff ascribes the difference in action of these various preparations, to the difference of the etiological character of this disease. According to his opinion, antipyrin proves only of service when the malady is due to a central nervous lesion. One of the patients on whom antipyrin had acted beneficially, died in his clinic, and the autopsy revealed a brain lesion as the cause of the disease.—*Bulletin Général de Thérapeutique*, Oct. 1888.

Antiseptic Pastilles in Diphtheria.—VAUMOND (*Wiener medicin. Presse*, No. 42, 1888) recommends the following as a prophylactic in diphtheria, especially for smaller children who cannot gargle and in whom applications to the pharynx are difficult:

R.—Acid. boric.	20 parts.
Sodii benzoat.	1 part.
Ol. thymi	½ to 1 part.
Sodii biborat.	20 parts.
Acid. citric	12½ "
Ol. limonis	1½ "
Ol. menthæ	½ part.—M.

Each pastille should weigh thirty grains and contain one-third of a grain of boric acid and one-thirtieth each of benzoate of sodium and of oil of thyme. As a solvent and basis, glycerin, water, gum, and sugar are used, and to give the mass consistence some gelatin is added.

Poisoning by Chromate of Lead.—DR. BERTHET read before the Société des Sciences Médicales de Lyon a paper upon the subject of poisoning by chromate of lead. The patient, a seamstress, used for her work yellow cotton; she was taken ill in the latter part of August with the following symptoms: Vomiting, albuminuria, cerebral excitement, etc. Patient died shortly afterward in a comatose condition, having previously suffered repeated epileptic attacks. The autopsy revealed congestion of the various viscera, especially of the lungs and kidneys. Chemical analysis proved a large deposit of lead in the brain.

DR. CORNEVIN calls attention to the fact that chromate of lead is often used to color butter.—*Lyon Medical*, Oct. 28, 1888.

For Burns.—

Iodoform	4 parts.
Extract of hemlock	2 "
Phenic acid	1 grain.
Unguent. rosæ	30 parts.—M.

—*L'Union Médicale*.

THE MEDICAL NEWS.

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SATURDAY, DECEMBER 1, 1888.

CREOLIN IN OBSTETRIC PRACTICE.

THE ideal antiseptic for practical use has yet to be found. An agent potent to destroy the causes and accompaniments of disease and favoring physiological processes is greatly needed. Bichloride of mercury fulfils best of known substances, the first indication, but is distinctly noxious to living tissues. Carbolic acid, boracic and salicylic acids, and thymol have points of excellence, but lack the efficiency of mercury in pathological conditions.

Early in the present year creolin attracted the attention of German obstetricians and surgeons, by whom it has been extensively used. The substance, when concentrated, is a brownish-black oily fluid, of tarry odor, and aromatic, burning taste; it is obtained from English pit-coals by distillation. Easily soluble in alcohol, ether, and chloroform, with water it forms a homogeneous, slightly alkaline emulsion: further knowledge regarding its chemical composition is wanting at present.

Experience with intra-uterine injections of bichloride of mercury, in dilute solutions, has led continental obstetricians to regard its use in this manner as distinctly dangerous. In the clinics at Giessen and Prague this use of mercury has been abandoned. Sommer, writing of the experience of the Charité of Berlin, reports a mortality rate from this source sufficiently high to call attention to the fact. Virchow has demonstrated mercurial nephritis in parturient women, and has emphasized the dangers of its use

in the anæmic and those in whom the parenchyma of the kidney is unsound. Géhé and Turgard have reported, recently, accidents from intra-uterine douches of mercurial solution. Boxall has called the attention of English obstetricians to the limitations to be observed in the use of mercurial injections. Credé and Winckel, in preparing a text-book for midwives, entrust them with carbolic acid, but not with bichloride of mercury.

A practical comparison of creolin and bichloride of mercury has been recently made by MINOPOULOS, in the Munich Frauen-klinik (*Münchener med. Wochenschrift*, No. 45, 1888). His material was 280 parturitions, equally divided between the two antiseptics. The results were, with bichloride of mercury: two cases of severe septic infection, thirteen cases of mild infection; with creolin, no severe infection, seventeen cases of mild sepsis. It was observed that the larger proportion of cases of mild infection occurred when creolin was used in one-half per cent. solution: this solution is, probably, too weak. A one per cent. solution was found especially useful in cases of fetid lochia, and a two per cent. solution as a stimulant and alterative in vaginal ulcers. These cases included the complications of pregnancy and parturition, and afforded a fair comparison.

Experiments upon bacteria by Esmarch and Eisenberg have shown that creolin, in one per cent. solution, retards the development of bacteria more efficiently than carbolic acid; in five per cent. solution it destroys pathogenic bacteria: creolin soap disinfects the hands more thoroughly than bichloride (1 to 1000) soap. Creolin does not injure the hands, and instruments of those who use it; it is an excellent deodorant. It has shown, up to the present time, no noxious properties, whether used externally or taken into the stomach. It deposits an insoluble tarry residue, when undisturbed for some time, which is the greatest practical objection so far observed to its use. Several preparations of creolin, domestic, English, and French, are available for obstetric practice.

The results obtained in surgery and obstetrics by others who have used creolin, invite the attention of the American profession to this antiseptic, and urge a trial of its virtues.

ADULTERATED AND IMPURE MILK.

The difficulties in the way of protecting the milk-supply of a city from adulteration and sources of

dangerous contamination are by no means trifling. Proper laws and ordinances proscribing adulteration under penalties, and their enforcement by a rigid inspection service may do much to prevent the more common forms of sophistication. But there is a danger, not so easily averted, in the possible contamination of the milk by pathogenic germs accidentally conveyed from different sources at the dairy or directly imparted by sickly cows, such, for example, as suffer from tuberculosis. It is not practicable to supervise continually all the dairies that supply a large city. The rigid enforcement of laws against tuberculosis in cattle will eradicate one source of the evil, but the accidental contamination of milk by disease germs is not so easily guarded against. Close supervision of the dairies would reduce the evil to a minimum, but this is difficult of execution. There is a want of knowledge upon this subject which should be supplied by instructive tracts issued to all those whose business it is to provide and deal in this important article of food.

Too great a risk is assumed in trusting to the honesty and intelligence of the milk purveyor or to the uncertain administration of laws for the protection of the supply. To this confidence many a young life has doubtless been sacrificed. Milk inspection is strongly to be commended, and no effort should be spared to render it as complete as possible; but no matter how satisfactorily conducted, it is the part of prudence to take the precaution of sterilizing all milk by boiling or steaming, a positive safeguard of easy application which physicians should feel it their duty to recommend day by day.

THE United States cruiser "Boston" arrived last Saturday in New York Harbor with yellow fever on board. There are three persons sick, one of whom is Surgeon W. I. Simon, who is in a most precarious condition. Four deaths occurred on board during the sail northward from Port au Prince, Hayti. The Boston encountered a four days' gale of wind, and the consequent pitching of the vessel militated greatly against a favorable course in the disease in the cases of Surgeon Simon and of the four enlisted men who died.

THE Vienna Medical Society has elected Dr. John S. Billings, of Washington, an honorary member.

DR. H. D. SCHMIDT, the distinguished pathologist, who for many years has been connected with the

Charity Hospital in New Orleans, died on the 23d ult.

PROFESSORS VON BERGMANN and GERHARDT were recently the recipients of an ovation from the medical students of Berlin, who formed in procession and marched past their residences.

PROFESSOR DU BOIS-REYMOND attained his seventieth birthday a few days ago, and the medical students made preparations to give him an ovation on the morning of the anniversary; but desiring to avoid all personal homage, he passed the day out of Berlin. A large number of messages of congratulation from all parts of Germany were forwarded to him.

DR. HEINRICH VON BAMBERGER died at Vienna on the morning of November 9th, after a short illness. Born at Prague, December 27, 1822, he studied medicine in that city, receiving his degree in 1847. Part of his student-years were passed at the Vienna University, where Skoda and Rokitansky were then teaching. Subsequently he became second-assistant to the Public Hospital at Prague, and during the years 1851-1854 he acted as assistant to Prof. Oppolzer, at Vienna, and in the spring of 1854 was made Professor of Special Pathology and Therapeutics at the University of Würzburg. Here Bamberger developed great literary activity. In 1872, upon the death of his teacher Oppolzer, he was made his successor, in the chair of Special Pathology and Therapeutics at the University of Vienna. His principal works were: his *Treatise upon Diseases of the Heart* (Vienna, 1857); on the *Diseases of the Chylopoietic System*, published in 1855, and a second edition in 1864, which was translated into Dutch and Italian. In his death the Vienna school has lost one of her most distinguished exponents.

REVIEWS.

A TEXT-BOOK OF PHARMACOLOGY, THERAPEUTICS, AND MATERIA MEDICA. By T. LAUDER-BRUNTON, M.D., D.Sc., F.R.S. ADAPTED TO THE UNITED STATES PHARMACOPEIA, by FRANCIS H. WILLIAMS, M.D. Third edition. 8vo. pp. 1305. Philadelphia: Lea Brothers & Co., 1888.

PERHAPS no book has been presented to the profession which aims and succeeds in giving so much of the three branches of pharmacological lore as does the one before us. From the fact that another edition has already been called for, we may fairly conclude that the book is increasing in popularity on both sides of the Atlantic,

which is not only complimentary to its author, but indicates that the medical profession is beginning to appreciate books which give more than a mere *résumé* of empiricism, and is beginning to understand the value of scientific deductions when made by a writer so thoroughly capable as is Dr. Brunton.

The new edition has been improved in so many ways that we have not space to mention them all in this brief notice. The most important of them, however, is the section on the action of drugs upon the eye. Antipyretics and their modes of action are also more fully considered, and by the use of small type for matters which are practically of little interest to general students, and yet are occasionally wanted for reference, a certain amount of space has been gained. Though the present edition contains 120 pages more than the second, the use of thinner paper has prevented much increase in the bulk of the volume.

We can cordially recommend the book as one of value to the physician who wishes to be brought into intimate touch with the recent advances of scientific therapeutics, and while we think it unfortunate that more of the space is not absorbed by consideration of the direct application of remedies to disease, we cannot but regard it as a work of which the author may be justly proud.

SOCIETY PROCEEDINGS.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 2, 1888.

THE PRESIDENT, WILLIAM GARDNER, M.D.,
IN THE CHAIR.

DR. BELL exhibited a case of

EXCISION OF THE KNEE

in a man aged forty-five years, cured in one dressing. The femur was rounded off to fit into a concavity in the tibia, as recommended by Dr. Fenwick, and the bones were held together by two nickel-plated nails. The first dressing was removed in five weeks. The specimen of diseased bone removed from the knee-joint was also presented; this showed large pieces of necrosed bone in several parts of the lower end of the femur.

Dr. Bell also exhibited a patient who had received an injury of the knee which had caused a

SEPARATION OF THE LOWER EPIPHYSIS OF THE FEMUR.

This had united in a bad position, so that the knee was very much bent inward, and the lower end of the shaft of the femur protruded through the skin. The parts were cut down upon, osteotomy performed, and the leg straightened. The result, as shown to the Society, was an admirable one.

DR. SHEPHERD exhibited a patient who had suffered from

COMPOUND FRACTURE OF THE OLECRANON.

The separated fragments of bone were sutured with silk, the result being bony union. The patient, a man aged twenty-five years, whilst working on board a ship, was struck on the elbow of the left arm by the fan of the ventilating apparatus; this split the olecranon process

vertically, and opened up the joint. When he came to the hospital the wound was covered with dirt, and on separating the lips of the wound it was seen that the olecranon process was split into two portions longitudinally, and the joint was opened. After cleansing the wound, the separated fragments of bone were brought together with two silk sutures and the wound closed, a small drain being left at the lower end. The dressings of gauze and jute were left on for three weeks, and when removed the wound was perfectly healed and the bone found united. The patient went to work a month after the accident, but for some time the movements of the joint were rather limited. The accident happened in July last. At present he has as good motion in the injured elbow as in the other.

DR. STEWART exhibited a patient suffering from

PROGRESSIVE HEMIATROPHY OF THE FACE,

and gave the following account of the case: The patient, a boy aged fourteen years, had always been in good general health. No history of any facial atrophy. In those parts of the face innervated by the left trigeminus, especially by its two lower branches, the skin, subcutaneous tissues, the muscles, and the bones of the left side of the face are greatly wasted. The muscles appear to have suffered less than any of the other structures. The left half of the tongue is wasted, but the palatine structures on the same side are as well developed as they are on the right; the left nostril is large on the atrophic side, apparently owing to wasting of the turbinated bones and mucous membrane. The special senses are fully as acute on the left as on the right side. There is no disorder of common sensation, the senses of touch and temperature are equally acute on both sides. Repeated measurements, taken with the differential calorimeter, are negative. The angle of the mouth is slightly drawn to the atrophic (left) side. The electrical reaction to the faradic and galvanic currents is normal. In fact, it takes fewer milliampères to bring about contraction on the atrophic side; this is, no doubt, due to the wasted skin of that side offering less resistance to the passage of the current.

The wasting was first noticed about two years ago. During the first few months it made rapid progress, but during the past year patient says he is not aware of any marked progress. Two years before the commencement of the atrophy the patient had the left half of his face and left ear severely frost-bitten. It was suggested that probably the profound irritation which the sensory nerves sustained as the result of this, had induced changes in the nuclei of their origin.

REVERSION IN A PIGEON WITH TUBERCULOSIS.

DR. T. W. MILLS exhibited specimens from a pigeon the subject of general tuberculosis. He said the specimens were of both physiological and pathological interest. The pigeon was a perfectly white Jacobin, bred by himself from a pair of red birds, and he asked if it was a case of Albinism, a "spert," or an instance of reversion, as understood by Darwin, or what breeders term "throwing back." Albinism is well known among wild animals (rabbits, squirrels, etc.), and "sperts," or the appearance of variations not to be accounted for on any well-recognized principles also occur. Upon the whole, Dr. Mills thought this was a case of reversion. A white cross has

been known to show itself in pigeon-breeding after nine years of careful breeding. The subject had been considered important by Darwin, for it was largely upon the evidences of reversion to forms and markings peculiar to wild species that this naturalist founded his views that our domestic animals were derived from a few wild forms.

The bird shown had died two days previously, after ailing for about three weeks. A post-mortem examination showed that the organs contained tubercles in every stage of development and degeneration. The moulting season is a very trying period for birds. Dr. Mills related an observation he had made to illustrate this; a young cockerel, getting its second feathers, was noticed to be bleeding in the region of the tail. Examination showed that the blood was oozing from the roots of the new feathers. The abundance of blood diverted to the skin, and a corresponding demand for nervous energy in this quarter, explained why other parts should suffer, and illustrated the general views he entertained as to the part played by the nervous system in the vital processes, and the practical importance of maintaining the balance of function so often disregarded both by brain-workers and by muscle-users (athletes). The case seemed to him very clear.

The specimen also illustrated two principles that seemed to hold in regard to tuberculosis among the lower animals: (1) The extreme rapidity of the process; and (2) the extensive character of the lesions. This bird had been ill only three weeks, and was fairly well nourished at death. The tubercles were very widely distributed, the organs inflamed and bound together by recent adhesions. Owing to enlargement of the organs and pressure the apex of the heart was squeezed to such an extent that it must have been functionless, while the immediate cause of death was, in all probability, mechanical interference with the action of the heart.

DR. SHEPHERD said he was much interested in the case of reversion exhibited by Dr. Mills, and said these are not at all uncommon in the human family. There is in nearly every person's anatomy some form of reversion to an earlier type. As bearing on these reversions of color, he instanced the occurrence of a red head in a family in which it had not been seen for several generations. He also mentioned a case which had lately come under his observation, viz., that of a cow having two rudimentary metacarpals developed in the fore limb, these being the rudiments of second and fifth toes.

DR. SMITH asked Dr. Mills if such a pigeon as he had shown was fit for food; he stated that no doubt many birds that were offered for sale on the market were subjects of tuberculosis.

DR. JAMES C. CAMERON reported a case of

NERVOUS(?) DIABETES, WITH HIGH TEMPERATURE, IN A PUERPERAL WOMAN.

The patient, aged twenty-two years, multipara, was admitted into the Montreal Maternity, October 10, 1888, in active labor. Her first child was born in May, 1886. During present pregnancy she suffered much from morning sickness, occasional hemorrhages, and painful micturition. Her matrimonial relations had not been happy; her husband left her some time before admission; she was an inmate of the Sheltering Home. She is subject to very violent outbreaks of temper. Labor was short

and uneventful, lasting altogether six and a half hours; her convalescence was normal for the first week; about that time she was fretting about something, subsequently it turned out to be an expected letter. On the morning of the eighth day her temperature was 99.4°, and in the evening rose to 100.6°, and the next morning was 102.2°. The urine was examined and showed a trace of sugar. Lactation was well established and was normal; appetite good; tongue clean; lochia normal; and urine not increased in amount. Fehling and Pavy's tests used to detect the sugar. There was no great thirst. At times her temperature would run up to 105°, and as the temperature increased so did the amount of sugar; the temperature seemed to rise with the least excitement, and the pulse was never high, even when the temperature was 105°.

Dr. Cameron went on to say that sugar had been frequently found in the urine of puerperal women during lactation, and M. Blot was the first to claim that its presence is then physiological. He asserted that sugar could be found in half the observed cases of pregnancy; that it begins to appear coincidentally with the milk, increases in quantity as the milk increases, and disappears when lactation ends; and that these phenomena are observable in other mammalia. M. Leconte, on the other hand, disputed Blot's conclusions, denied the existence normally of sugar in the urine of nursing women, and said that Blot mistook uric acid for sugar. Beneke and others, however, have confirmed Blot's observations.

Dr. Cameron said that in his case sugar was not found till after lactation had been fully established; it increased as the temperature rose and the milk became scanty, but as the temperature fell the milk again became abundant, and evidently lactation had nothing to do with the appearance of the sugar. That the nervous element had much to do with the production of the sugar, he had no doubt, as when nervous phenomena began sugar increased, and when they disappeared the sugar also disappeared. On the 27th sugar was absent, and the patient was preparing to leave the hospital that day, but when Dr. Cameron made his visit he told her she had better remain a few days longer; she immediately began to cry and fret, and although her temperature did not rise sugar reappeared in the urine.

The reader of the paper said he could quite exclude septic trouble and local mischief, troublesome lactation, sore nipples, constipation, digestive troubles, and other causes which sometimes cause rise of temperature. Attention was directed to a chart which was exhibited, and which showed the peculiar action of the temperature, rising during waking hours and falling during sleep, without corresponding variation in pulse.

That the temperature caused the glycosuria, or the glycosuria the elevation of temperature, was not at all likely, both conditions seemed rather to have been due to some peculiar nervous influence.

DR. T. WESLEY MILLS, in speaking of the cases detailed to the Society by Drs. Stewart and Cameron, referred to the views he had recently presented on the relation of the nervous system to the vital processes, at the late meeting of the Canadian Medical Association, at Ottawa, and also at the Washington Congress in September. He thought it would greatly widen our conception, and give truer views both of physiological and path-

ological processes, if vital processes were regarded as a related whole, the parts of which could not be isolated and placed out of relation with the rest. That such had grown up in our midst was the result of book treatment, and had no foundation in nature. What is "nutrition?" Can it be considered apart from secretion, heat-production, etc.? Dr. Mills maintained that it could not without the danger of getting artificial conceptions. Were these trophic nerves? was a question subordinate to: Does the nervous system in mammals regulate the entire metabolism, or only certain phases of it? If it regulates secretion, he did not see, apart even from special evidence, how the conclusion could be avoided, that it regulates heat-production, etc., for these processes are only *phases* of an inseparable whole while life lasts. It would appear that physiologists had substituted their own artificial conceptions for the real state of the case as it exists. In one sense all nerves are trophic. Dr. Cameron's case was a remarkable but not isolated instance of the truth of the view that heat-production is under the influence of the nervous system; and if so, why not the entire metabolism of the body?

If the sugar in the urine in this case was really grape-sugar, it was another evidence for such a general view as he was advocating. The narrow views as to diabetes being due to disorder of the liver only, must be abandoned. We are satisfied with explanations that are so simple and also artificial; we constantly forget how complex the relations among the different parts of the body are.

DR. LAPHORN SMITH said he had seen the temperature rise as high as 103° F. after drinking a cup of hot tea. He had seen the receipt of bad news cause an elevation of temperature.

DR. RUTTAN said that milk-sugar in the urine of nursing women is not uncommon. Lactose will answer to Fehling's test, and only the fermentation test will distinguish between milk-sugar and grape-sugar.

DR. GEORGE ROSS said that the striking observations of Dr. Cameron were of the greatest interest; he was not aware of similar ones. Elevation of temperature in connection with nervous causes seems to be true, and the nervous system in the puerperal state is especially liable to disturbances, and also after fevers, such as typhoid; sudden elevations of temperature are common during the convalescence from typhoid, and are of no very serious import. This elevation is quite different from the gradual rise which indicates a relapse. The sudden elevations are usually produced by emotional causes.

It is not usual to have high temperature with glycosuria. The fact that the temperature dropped at night and became elevated during the day, was significant of nervous disturbance; also that these symptoms disappeared under bromide of potassium.

DR. REED related a case of atrophy of the muscles of one side of the face without atrophy of the other tissues. Glycosuria was caused by the arrest of the flow of milk. He would like to ask if the sugar was estimated from the whole quantity of urine passed. He spoke of a case of very high temperature caused by the shock of a railway accident.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, November 5, 1888.

THE PRESIDENT, D. HAYES AGNEW, M.D.,
IN THE CHAIR.

UNDESCENDED TESTICLE; PURULENT INFLAMMATION OF OVERLYING GLANDS.

DR. THOMAS G. MORTON presented two testicles recently removed. The first was from a patient, aged twenty-four, who had been affected with a hernia into the left scrotum since birth, and the testicle upon the same side had not descended into that pouch at any time that he could remember. He had never worn a truss or received any treatment for either condition, nor had he in any way been troubled thereby until within a few weeks, when inflammation had been set up in the inguinal region apparently without cause, save that he had slightly strained himself some three weeks before. He presented an abscess of the corresponding groin which seemed to have origin in the lymphatic glands of that region which in turn appeared to have had origin in the tearing of an attachment of the undescended testicle at the time of strain, as that injury was said to have marked the onset of his present difficulty.

There was no history of chancre or palpable evidence of its former presence. The testicle could be plainly outlined by carrying a finger along the inguinal canal. I obtained his consent to operation and made an incision over the abscess, drained it of about an ounce of pus, excised the affected glands and then came down upon the testicle lying in the canal but now fused with all the anterior structures by inflammatory products. It was freed from all attachments, a ligature of catgut cast about the cord, and the organ removed. The wound was now thoroughly curetted, washed with powerful sublimate solution, and closely sutured, leaving in a rubber drain. No unfavorable symptoms followed the operation, the drain was removed upon the fifth day, and he is now quite well. The specimen showed itself to be an undeveloped testicle surrounded by a tunica vaginalis altered by inflammatory changes; the testicle itself being about the size of a cherry. The hernial sac was not opened and Dr. Morton thought best not to interfere with the rupture until, perhaps, at a subsequent time.

DR. MORTON also showed a second specimen, illustrating

TUBERCULAR DISEASE OF THE TESTICLE,

that day removed. This one was taken from a colored man, aged thirty-five, at the Pennsylvania Hospital. For the past few months he had suffered with pain in the testicle and cord of the right side, and had twice during that time been operated upon for hydrocele of the corresponding tunica vaginalis. The much enlarged organ and a portion of the cord were removed by the usual method. Upon section both cord and testicle presented typical cheesy deposits, one large central collection and numerous smaller foci.

Wm. B., aged thirty-nine, colored, married, has had syphilis for past seven years. Two years ago he noticed that the left testicle was enlarged and painful. This increased in size until one year ago, when a hydrocele was diagnosed and tapped, with but little decrease in size of tumor. Pain has been much worse for past three

weeks, and patient has sense of dragging in scrotum. When admitted but a slight amount of fluid could be detected. Dr. Morton opened the scrotum, evacuating an ounce or so of dark fluid; he found the testicle diseased and removed it. Cord much enlarged and many evidences of chronic inflammation present.

CORRESPONDENCE.

INAUGURATION OF THE PASTEUR INSTITUTE.

(From our Special Correspondent.)

THE inauguration of this institution took place on November 14th, in the presence of the President of the French Republic, who presided, assisted by the Presidents of the Senate and House of Representatives, as well as by the Secretaries of War, of the Interior, of Public Instruction, of Finance, and of Commerce; members of the Academy of Sciences and of Medicine, etc. This solemnity took place in the library hall of the Pasteur Institute, which hall contains six busts in marble of the largest donors to the enterprise—the Emperor of Russia, the Emperor of Brazil, Mme. Boucicaut, Mme. Furtado-Heine, Comte de Lauberpin, and Baron Alphonse de Rothschild.

The first speaker was M. Bertrand, Permanent Secretary of the Academy of Sciences. After remarking that the 14th of November, 1888, would never be forgotten in the history of medicine, he said: "During the past forty years, my dear Pasteur, you have permitted glory to come to you, without moving a step toward it. Amongst so many routes, by which often one reaches for it, you yourself know but one, the route of truth."

M. Bertrand then made a most touching study of the early life of Pasteur, and he recorded how one of their mutual classmates, Verdet, had prognosticated about Pasteur; "Pasteur," said he, "knows not the limits of science—I am afraid that he will work hard in vain—he likes insoluble questions." Could any one have estimated him with more sagacity? "The problems which, for half a century, have occupied your mind continuously, giving you no intellectual rest, are no more insoluble to-day. It is to thank you in the name of humanity, to rejoice ourselves in the name of science, to glorify us all in the name of France, that we are united here to-day."

Professor Grancher was then introduced; his speech, being a *résumé* of the work done by Pasteur since the announcement of the method, we shall give in full:

Mr. President of the Republic and Gentlemen: The communication made by M. Pasteur to the Academy of Sciences on October 26, 1885, in which he announced that young Meister had been successfully inoculated with the antihydrophobic virus, created a deep sensation among the scientific world. It was, indeed, the first direct application to man of a general method of treatment of virulent and contagious diseases, and we can easily understand the enthusiasm and hopes of some, and the scepticism, even the hostility, of others.

After Meister and Jupelle, the wounded came to M. Pasteur and his assistants in such numbers that they had to organize a service accessory to the antihydrophobic treatment: matriculation of patients, dressing of wounds,

correspondence, etc., so much so, that the year 1886 was absolutely absorbed by the amount of work required for the vaccination of 2682 persons, French and foreigners, each person receiving on an average from fifteen to twenty inoculations.

At that moment, M. Pasteur felt the imperious necessity of a journal, or official organ of the laboratory, which would publish every month the statistics of his vaccination; unluckily his health, seriously attacked by his fatigues and emotions, obliged him to leave Paris toward the end of the year 1886; and the *Annales de l'Institut Pasteur*, started by M. Duclaux, professor of biological chemistry at the Sorbonne, only appeared in January, 1887.

However, the adversaries of M. Pasteur's method, did not fail to profit by our silence, and as we had a few failures during the year 1886, they easily spread the rumor that our laboratory hid its cadavers, and that our dead were legion. They went even so far as to say that the new method would give hydrophobia instead of curing it.

In the beginning of the year 1887, the Academy of Medicine took up the question, and we were then enabled to combat by facts and numbers these calumnious reports which excited the public mind and frightened our patients. At the same time, the learned societies at Naples, Vienna, and St. Petersburg, took up the discussion of this subject, and the war between the Pasteurians and the anti-Pasteurians was a serious one.

In those scientific discussions in which the attack and the defence were equally vivid, everything has been said for and against the antirabic method of vaccination; its adversaries sustaining that the method is inefficacious and dangerous according to the case presented; its partisans, on the contrary, claiming that antirabic vaccination is devoid of danger and marvellously efficacious.

The battle, which was suspended for several months, was taken up again in July, in the presence of M. Pasteur, who answered his contradictors with his well-known gallantry. It was brought forward by the report of the English Commission which M. Pasteur presented to the Academy. This official commission, composed of the most celebrated scientific men of England, having a young and clever physiologist, Mr. V. Horsley, as reporter, arrived in Paris in a very incredulous spirit. After having made a very serious study of the facts presented, they returned to England and repeated the experiments of M. Pasteur; the experimental control lasted more than one year. The conclusion of the Commission, to the great disappointment of our adversaries, was, textually, that "M. Pasteur had discovered a preventive method of hydrophobia comparable to the one of vaccination against variola."

The discussion at the Academy was ended by the following words of M. Charcot:

"Yes, the inventor of antirabic vaccination can to-day, more than ever, march forward, head erect, and pursue the accomplishment of his glorious task, without allowing himself to turn for one single moment because of the outcries of systematic contradiction or the insidious murmurs of disparagement."

These words were listened to and remembered by all, and the year 1888 has been a pacific one.

Gentlemen, before presenting to you my statistics, I would like to say to you what were the causes, to my

mind, which have brought about such an hostility against antirabic vaccination.

You know that M. Pasteur is an innovator, that his creative imagination, regulated by a strict observation of facts, has overthrown many errors and built up in their place a new science. His discoveries on ferments; on the development of the infinitely small microbes causing contagious diseases, and on the vaccination of these same diseases, have been for biological chemistry, for the veterinary art, and for medicine, not only a regular progress, but a radical revolution.

Well, revolutions, even those imposed by scientific demonstrations, leave behind, wherever they pass, vanquished who do not pardon easily. M. Pasteur has then in the world many adversaries; without counting those Frenchmen at Athens who do not like to see the same man always just and always successful; and, as if his adversaries were not numerous enough, M. Pasteur makes additional ones by the implacable vigor of his dialect and by the absolute form which he sometimes gives to his thought.

This form can be dangerous, especially in medicine, where nothing is absolute, and where exceptions to the rule are always numerous. Well, M. Pasteur, by a habit of mind, neglects willingly these contingent facts, which could not, it is true, prevail against law, but which, when it touches a medication applied to the human species, merits to be counted. He has, then, purely and simply proclaimed the efficacy of his method for the treatment of hydrophobia, without making reserves as to the possibility of partial failures; while, if he had been a physician, he would have instinctively taken this precaution, foreseeing the possibility of failure. He did not do that, and exposed himself to the attacks of rational medicine.

To comprehend the opposition of medicine to the discoveries of M. Pasteur, it suffices to examine the movements which have agitated it for the past fifteen years. We hardly knew that in certain diseases, the blood, the humors of the body, and the tissues were occupied by microorganisms, when M. Pasteur, led by his discoveries of ferments, threw himself into this new path for him and for us. And what discoveries he made one after another! He enlightens us; no, he dazzles our eyes accustomed to the semi-daylight of Hippocratic medicine.

See M. Pasteur in the presence of the microorganism of carbuncle of animals. Not only does he make its biology, not only does he prove to us that it is the unique cause of carbuncle, but he educates, he disciplines this infinitely small entity, and teaches it to serve against itself and to become its proper vaccine virus. The experiment of Pouilly le Fort, which had been prepared for a long time by MM. Pasteur, Chamberland et Roux, is known all over the world.

When M. Pasteur, at the London Congress in 1881, announced his great discovery of the attenuation of virus and the vaccination of chicken cholera and carbuncle, one of the most competent men in bacteriology, M. Koch, is reported to have said: "It is too fine to be true;" and three months later, in the first number of the *Mittheilungen*, of Berlin, M. Koch contradicted Pasteur. Since then, however, he has recognized that attenuation and vaccination are correct facts and of great scientific value; but he still refuses to believe the practical value of these vaccinations, although the vaccine of carbuncle extends in every

country where carbuncle exists—in France, Italy, Hungary, Spain, India, and Australia.

What better proof do we need of its practical and scientific value? This opposition did not trouble M. Pasteur, who said to us, "Well, let them not believe in the attenuation of virus and vaccination, we shall have ten years advance on them."

The study of carbuncle is hardly finished, when M. Pasteur begins with hydrophobia. Here, for several years, with the aid of M. Roux, he made experiment after experiment, and arrived at still more surprising results. The microbe of hydrophobia has escaped observation up to date, but it certainly exists. Knowing it only by its effects, M. Pasteur has found the way to utilize it as vaccine. And, moreover, M. Pasteur has proposed vaccination after dog-bite—that is, after infection. Physicians, up to now, have always accepted the dogma that when a virus, whatever it may be, has penetrated the human organism, it is beyond our reach and we must await its results. The resistance of physicians to so much subversive news is then quite comprehensible. To recognize that we have first learned and then taught errors, requires outside of personal and impartial new facts, a certain freedom of mind which is not always found, even in most distinguished men.

M. Pasteur, luckily for him and perhaps even for us, is not a physician. Experimenter, without any preconceived ideas or influence of a special school, he has created by the side of rational medicine, which he ignores, a new medical science which his contradicts themselves ignore. This medicine is founded on the idea that this morbid spontaneity does not exist for infectious diseases, and that the laws of general pathology are common to men and animals. How many physicians, however, have been brought up to believe the contrary. This being the case, how can we be astonished at their opposition and their rebellion? I, for my part, think their scepticism very excusable, as it proceeds from traditional ideas, that is, from the spirit of preservation.

It must not be forgotten, and M. Pasteur does not forget it, that at the critical hour, a great many physicians, men of science whose authority was universally recognized, have helped the right and favorable side of the scales to come down. Of the first rank, Vulpian, who not only had followed Pasteur, but who had pushed him to the antirabic vaccination. Vulpian fought and died on the battlefield defending with a fiery eloquence the new method.

Besides Vulpian, Brouardel, Charcot, Verneuil, Chauveau, and Villemin have honored themselves in sustaining the course of progress and preparing its triumph.

M. Pasteur had then the good fortune to find, even at the hour of defection and weakness, a double fulcrum: on one side the great number of patients who never hesitated; on the other, the encouraging words of our most eminent masters. Many other physicians believed in the scientific faith of M. Pasteur, I cannot name them nor do I know them all; but they kept quiet, and our adversaries made such a noise in the press and academies, that the antirabic vaccination was thought to be a thing of the past—to be dead. The method lives, gentlemen. It is prosperous, for there exist to-day, counting the one in Paris, more than twenty antirabic institutions dissemi-

nated throughout the entire world. There are seven in Russia: in Odessa, St. Petersburg, Moscow, Warsaw, Charkow, Samara, and Tiflis; five in Italy: at Naples, Milan, Turin, Palermo, Bologna, these last two having been recently created and sustained by the King; one in Vienna; one in Barcelona; one in Bucharest; one in Rio de Janeiro; one in Havana; one in Buenos Ayres; finally, in Chicago and Malta two new laboratories are being organized. The Antirabic Institute of Paris is in continuous relation with these laboratories, the chiefs of which have all, but two, come to Paris to study the method of M. Pasteur, to apply it to their patients with its progressive improvements.

From the origin we have classified our patients into three sections A, B, and C. The section A contains all the persons bitten by animals recognized to have been hydrophobic by absolute experimental proof. In section B are inscribed all the persons bitten by animals declared to be hydrophobic by certificates of veterinary surgeons; it is the most crowded section. Finally, section C contains the persons bitten by animals suspected to be hydrophobic. Suspicion here results from the circumstances under which the bite has been given; an unknown dog crosses a village, bites a few children and animals, dogs and sheep, and then disappears. If those persons present themselves at the Laboratory, we inscribe them in section C. This section becomes more and more restricted, for we are very severe in our selections, and I think I can safely state that 98 per cent. of the persons we admit for vaccination have been bitten by mad dogs.

Our *general* statistics comprise these three sections, A, B, and C, united in one section. It is subdivided into a *particular* statistic to each one of the sections A, B, and C, and into a *special* statistic for the bites of the head, face, extremities, and trunk.

The number of persons that were treated in Paris, during the years 1886-7 and the first half of 1888, amount to 5374. In 1886, when we had a great number of foreign patients, we inoculated 2682 persons; 1778 in 1887; and 914 up to July 1, 1888.

The percentage of mortality, counting even the deaths of those that were taken with hydrophobia on the first day after the treatment, is for 1886 1.34 per cent.; in 1887 1.12 per cent.; and in 1888 0.77 per cent.

But it would be right to separate from the table of mortality, the persons who died from hydrophobia within fifteen days that follow the treatment; for vaccination, to be efficacious, must be terminated before the virus of the biting dog has begun incubation in the nerve centres. We know that the virus of common hydrophobia, introduced directly on the surface of a dog's brain, incubates from fifteen to eighteen days before it produces its effects. In patients who die from hydrophobia during the fifteen days that follow the treatment, this last has been useless, it having been applied too late; it has not failed because the condition of its efficacy had not been realized.

In separating those cases from the number named—and no physician will oppose this—the percentage of our deaths, notwithstanding the treatment, comes down for 1886 to 0.93 per cent., for 1887 to 0.67 per cent., and for 1888 to 0.55 per cent.

Our mortality decreases gradually, and this is due to the progressive improvements brought to our first method of treatment. We now make a more energetic,

more prolonged, more intense treatment, using M. Pasteur's expression, and the treatment yet remains inoffensive. This different efficacy of the antirabic vaccination, according to the one or the other formula, is the most palpable proof of its therapeutic efficacy. The Russian scientific men who combated the antirabic vaccination in Odessa and at St. Petersburg, took this fact into consideration, when they stopped their opposition, M. Gamaleia having shown to them the two very different tables of mortality, according to the method employed.

At Odessa, the first or simple treatment applied to 136 persons, gave a mortality of 5.88 per cent.; while the *intensive* treatment, applied to 997 persons, has given a mortality of 0.80 per cent.

Dr. Bujwid, Chief of the Laboratory at Warsaw, made similar observations; this gentleman, who is here present to-day, will not contradict me when I say that when he called here to study antirabic vaccination he was very sceptical. A student of Koch, and already a very able bacteriologist, he studied with us several months, then continued in his private laboratory at Warsaw, where he performed antirabic inoculation. M. Bujwid studied the simple treatment, stopping at the solution of spinal cord of six days. 195 persons were vaccinated by this method, with a mortality of 4.1 per cent. On the contrary, the *intensive* treatment applied to patients who had suffered from a really severe and dangerous bite (30 persons had been bitten in the face, and 4 by hydrophobic wolves), gave the most encouraging results. Out of 370 persons vaccinated up to the 1st of September last, not one single case of death occurred; so that M. Bujwid, who was an unbeliever for a long time, has become a most convinced partisan of the method. Our particular statistics for each section, A, B, and C, bring us to the same conclusions. The mortality in section A, which contains persons whose bite has certainly had a virulent character, hardly differs from the mortality of section C, which includes persons bitten by animals which were only suspected of having hydrophobia. For the three years, 1886, '87, and '88, the mortality in section A is 1.36 per cent., counting all deaths; and only 1.09 per cent., counting deaths that have occurred fifteen days after the treatment. In section C this mortality is 1.30 per cent. and 0.54 per cent. This similitude in the rate of death for these two sections apparently very different, proves two things: 1st. That the greatest number of biting animals had been suffering from hydrophobia. 2d. That persons of these two sections (A and C) must be treated with the same severity.

The special statistics for the bites of the face, of the hands, and extremities, prove in their way the efficacy of antirabic vaccination. We know that in old statistics the average mortality for all bites were 10.15 and 20.1 per cent., according to the observer; and that the mortality from bites of the head and face reached up to 80 and 88 per cent. In our statistics, the mortality after bites of the head or face is 3.84 per cent., if we count all deaths; it is really only 1.82 per cent., if we separate the deaths that have occurred within the first fifteen days following the treatment. Hence, in this kind of bite, half of the deaths occur during the first fifteen days that follow the treatment, which is a new proof of their excessive gravity. But this dangerous period passed, the treatment is nearly as efficacious for them as for ordinary

bites. We explain our favorable results in these cases by the very energetic character of the vaccination of persons bitten in the head or face.

The great difference which exists between our statistics of 1.82 per cent. and the number of the classical statistics, 80 to 88 per cent., is so large, that it is really impossible not to admit the favorable influence of the antirabic vaccination.

The foreign statistics are in accordance with ours at St. Petersburg; the laboratory which has been started by His Imperial Highness Prince Alexander of Oldenburg, who keeps it up at his own expense, has vaccinated from July 13, 1886, to September 13, 1888, 484 persons, with an average mortality of 2.68 per cent.

From the explanations given to us by Dr. Kraiouchkine, physician to the antirabic laboratory, it results that his death-rate, somewhat higher than ours, is due to the fact that bites are extremely severe in character in his region.

At Odessa, in the laboratory under the charge of Professor Metschnikoff, Dr. Gamaleia has vaccinated:

In 1886, 324 persons by different simple methods. Death-rate 3.39 per cent.

In 1887, 345 persons by the *intensive* treatment. Mortality 0.58 per cent.

In 1888, 364 persons by the *intensive* treatment. Mortality 0.64 per cent.

During these three years 1135 persons have been treated by the antirabic method, with a mortality of 1.41 per cent.

At Moscow, the Antirabic Institute, founded under the protection of Prince Dolgoroukova, has vaccinated, in 1886, 107 persons by the simple treatment; death-rate, 8.40 per cent. In 1887, 280 persons by the intensive treatment; death-rate, 1.27 per cent. In 1888, 246 persons by the intensive treatment; death-rate, 1.60 per cent.

In Warsaw, M. Bujwid has inoculated 297 persons by different simple methods. His average mortality has been 3 per cent. 370 persons by the *intensive* method. Not one person has died up to date. (It is sixteen months since he began this intensive treatment, and two months since he made his last inoculation.)

At Samara, Dr. Parchenski has vaccinated 53 persons, 4 having been bitten by wolves. The mortality, which was very high here, 5.67 per cent., is explicable by the fact that the treatment, according to the explanations given us by Dr. Parchenski himself, had not been sufficiently energetic and prolonged.

At Charcow, and probably for the same reasons, but we have not been able to get any clear statement, 233 persons have been vaccinated with a death-rate of 3.80 per cent.

At Milan, Dr. Baratieri has vaccinated 335 persons; 2 died notwithstanding the treatment; death-rate, 0.60 per cent.

At Palermo, Prof. A. Celli had vaccinated from March 1 to September 30, 1888, 109 persons without one case of death.

At Naples, Professor Cantani has been obliged to close his laboratory on account of the financial question, the city authorities having refused to support the laboratory. The laboratory was closed from January to August, 1888. In that city, the adversaries of M. Pasteur were very numerous, and had succeeded, notwithstanding a vote of confidence and encouragement on the part of the

Academy, to divide public opinion and set the city authorities against M. Pasteur's method. But during this period of seven months, nine deaths occurred as a result of hydrophobia in Naples, and then the city authorities promised financial help for the opening again of the laboratory; the government of Italy, as well as the province of Naples, has also promised to help the work, and the laboratory has again opened its doors. 246 persons have been vaccinated in Naples, 199 since the day of opening of the laboratory (Sept. 22, 1886) up to January, 1888; and 34 since the reopening. The death-rate after vaccination has been 1.5 per cent.

In Havana, in the Antirabic Institute of Dr. Santos Fernandez, Dr. Tamayo has inoculated 170 persons, of whom 50 were bitten by animals which suffered from undoubted hydrophobia. The mortality was 0.60 per cent.

At Rio de Janeiro, in the vaccinating laboratory due to the initiative of the Emperor of Brazil, Dr. Ferreire dos Santos, has vaccinated 53 persons, with no case of death up to now.

Gentlemen, I cannot overlook the statistics of the district of the Seine (which comprises the city of Paris), which is the object of a yearly special report to the Board of Health. The report of 1887 has been made by Dr. Dujardin-Beaumetz, who has obtained his documents at the Prefecture of Police, and for the vaccinated persons at the laboratory of M. Pasteur. Well, in 1887, the number of persons bitten and vaccinated is 306, out of which two died, death-rate 0.76 per cent.: on the other hand, seven cases of hydrophobia have occurred amongst the 44 persons who have not reported for vaccination, which gives us a death-rate of 15.90 per cent.; a ratio which is accepted by MM. Pasteur and Brouardel as being the average of the death-rate by hydrophobia in Paris before the introduction of vaccination. M. Dujardin-Beaumetz concludes: "I know no evidence more striking of the value of the method of inoculation."

The report of M. Beaumetz contains another conclusion not less interesting—that is, that hydrophobia is a disease that administrative sanitary measures can combat. He recalls the fact that in Germany hydrophobia has nearly disappeared, which is owing to the very intelligent prophylactic measures taken. Hydrophobia is, indeed, never spontaneous, it is always transmissible from one animal to the other, and of all animals the dog is certainly the most susceptible.

The following numbers will indicate what intelligent prophylactic measures might do. In December, 1887, the number of persons bitten by hydrophobic dogs was 32; it came down to 25 in January, 1888; then suddenly went up to 61 in February; 57 in March; 56 in April; 67 in May. At that moment the police authorities formulated an order that any dog found running in the street, without his master, would be seized. This order was vigorously enforced, and we find in June only 46 persons bitten; in July 29; in August 19. In September a more liberal order in favor of dogs was emitted, and the number suddenly rose to 38. When we observe this rapidly decreasing rate under sanitary measures, does it not seem certain that with a little more perseverance on the part of the public authorities, and a little good will on the part of the population, we might be able to reduce the number of cases of hydrophobia in France, as in Germany, to almost nothing?

You know, gentlemen, that Pasteur's Institute has been founded not only for the treatment of hydrophobia, but also for the scientific study of the means to combat practically the diseases which affect the human species; diphtheria, typhoid fever, phthisis, etc. The extensive laboratories which will be opened to French and foreign physicians, will be for humanity a source of blessing, and a strong means to diffuse and export French science.

M. Christophe, Governor of the Credit Foncier, then exposed in a very able speech the financial situation of the Institute.

Finally, M. Pasteur's son read the following speech for his father, who was too much impressed by all that had been said to be able to read it himself:

Mr. President of the Republic, and Gentlemen: The one who will write in twenty years from now our contemporary history, and will search amidst the war of political partisans the secret thoughts of France, will be proud to be able to say that in the first rank of its pre-occupation, public teaching in every degree has been placed. From the village schools to the laboratories of superior studies, all have been either founded or renewed. Student or professor, every one has taken part in it. The great masters of the university have comprehended that if it was necessary to allow primary and secondary education to flow like large rivers, it was also needful to occupy one's self with the spring, namely, superior studies. They have given to this education its deserved place; such an education can only be reserved for a small number; but from this small number, and its select brains, will depend the prosperity, the glory, and, finally, the superiority of a nation.

This is what will be said, and what will be the honor of those who have originated and seconded this great movement? For myself, gentlemen, if I have had the happiness to be led in some of my researches to the knowledge of certain principles which time has consecrated and rendered fruitful, it is because I have never been refused what was necessary for my work. And the day when I foresaw the future which opened itself before the discovery of the attenuation of virus, I addressed myself directly to my country, that it should permit me, by the force and generosity of public initiative, to construct laboratories which not only would apply themselves to the prophylactic method of hydrophobia, but also to the study of virulent and contagious diseases, on that day France has given our hands full. Collective subscriptions, private liberalities, generous gifts due to fortunes that scatter their favors like the ploughman who sows his wheat; all have contributed, even to the workingman who took from the salary of his daily hard work.

While this French concentration was taking place, three sovereigns gave us an evidence of their effective sympathy. His Majesty, the Sultan of Turkey, desired to be amongst our subscribers; the Emperor of Brazil, this emperor, man of science, inscribed his name with the pleasure of a colleague, said he; and the Czar of Russia saluted the return of the Russian subjects who had been treated by us, by a really imperial gift. To the Russian physicians who will work in our laboratories, and are already present amongst us, I address to the Czar our compliments of respectful gratitude.

How these sums have been centralized at the Credit Foncier de France, and the use made of them, you have just heard from the report made by M. Christophe, but

he has not told you with what an attachment he has managed this National property.

Before placing the first stone of this Institution the Committee of Subscription had decided, against my will, that this Institute should bear my name. My objections persist against a title which reserves to a man the homage due to a doctrine. But if I am confused by such an excess of honor, my gratitude will be the more profound and complete. Never has a Frenchman addressing himself to other Frenchmen, been so touched as I am at the present moment.

This great house is, then, an existing fact, and one could say of it that there is not a stone in it which is not the sign of a generous gift. All the virtues have united themselves to elevate this home of work. But, alas! I feel the terrible melancholy of a man entering it "vanquished by years," who has no more around him his masters, not even one of his war companions, Dumas, Bouley, Paul Bert, Vulpian, who have been with you, my dear Grancher, the counsellor of the first hour, the most convinced and most energetic defenders of the method.

However, if I have the sorrow to say: They are no more, after having valiantly taken part in the discussion which never originated with me, but which I had to endure; if I am as sad at their absence as I was the day after their death, I have at least the consolation to think that what we have sustained together will not perish, our scientific faith is shared by contributors and disciples here present.

The department for the treatment of hydrophobia will be under the direction of Professor Grancher, who will be assisted by Drs. Chantemesse, Charrin, and Terrillon. The Secretary of Public Instruction has authorized M. Duclaux, my oldest student and assistant, to-day professor at the Faculty of Science, to deliver his lectures on biological chemistry, which up to now had been given at the Sorbonne, and will be given hereafter in our Institute; he will be chief of the laboratory of general bacteriology. M. Chamberland will direct bacteriology in its relations to hygiene. Dr. Roux will direct the studies of bacteriology applied to medicine, and two Russians, learned men, Drs. Metschnikoff and Gamaleia, will kindly help us in our work, and the domain of morphological bacteriology and comparative bacteriology will belong to them.

You know, gentlemen, the hopes we have in the researches of Dr. Gamaleia. I purposely use the word, *hopes*; for the application of the process to man is far from being done yet; but the greatest difficulties have been left behind.

Constituted, as I have just told you, our Institute will be at the same time a dispensary for the treatment of hydrophobia, a centre of researches for infectious diseases, and a centre of learning for the studies belonging to bacteriology. Only of recent origin, but born already armed, this science has obtained such a force by its recent victories, that it gains all the minds. This enthusiasm, which you have felt from the earliest hour, keep it, my dear assistant, but give it, for an inseparable companion, a severe control. Never advance anything which cannot be proven in a simple and decisive manner. Have the religion of critical spirit. Reduced to itself alone, it is not an originator of ideas, nor a stimulant of great things. Without it everything is incomplete. It always has the

last word. What I ask you now, and what you shall ask at your turn of the disciples you shall form, is that which is most difficult for the inventor. To think that one has found a very important scientific fact, to have the fear to announce it, and to constrain yourself for days, weeks, sometimes even years to combat yourself, to seek to contradict your own experiments, and to proclaim your discovery only when you have spent on your experiments all the contrary hypotheses; yes, this is a hard work. But when, after so many efforts, one has arrived at certainty, one feels one of the greatest joys that a human soul can experience, and the thought that he will contribute to the honor of his country renders this joy still more profound.

If science has no nationality, the man of science must have one, and to it must he report the influence which his works must have in the world.

Should it be allowed to me, Mr. President, to terminate by a philosophical thought, brought on by your presence in this hall of work, I would say that two contrary laws are to-day present, a law of blood and death, which imagining daily new methods of fighting, obliges people to be always prepared for the battlefield; and a law of peace, of work, which thinks of nothing else but to save man from the scourges which daily overpower him.

One hunts for violent conquests, the other for the relief of humanity. This one places a human life above all the victories; the other sacrifices hundreds of thousands of lives for the ambition of one man.

The law of which we are the instruments, even searches in the carnage to heal the bloody evils of this law of war. The dressings inspired by our antiseptic methods can preserve thousands of soldiers. Which one of these two laws will overcome the other. God above knows it. But, what we are able to assure is that French science shall have done its best in following this law of humanity in extending the frontiers of life.

The President of the French Republic then rose, and after having remarked that M. Pasteur had asked honors only for his assistants, he nominated Professor Grancher and Professor Duclaux, officers of the Legion of Honor, and Dr. Chantemesse was created knight of the same order.

THE PASTEUR INSTITUTE

has been erected by a subscription of persons all over the world; the rich as well as the poor workman have contributed to the success of this enterprise, and over five hundred thousand dollars have been collected for that purpose. The building, according to the proper wish of Pasteur, is not attractive by its architecture, but was built with the object of being useful to those who would seek information under its roof, and not for the tourist.

Pasteur's Institute has been divided into six departments, viz.: department for the treatment of hydrophobia; department of general bacteriology; department of medical bacteriology, which will be divided into two sections; first, section on methods, second, section of research; department of morphological bacteriology; department of bacteriology applied to hygiene.

The department of hydrophobia is the most important section, for the present, at least; every day, in the morn-

ing, from sixty to eighty persons are inoculated, and in the evening from twenty to thirty; no Sundays are allowed for holidays, and the inoculators are always to be found at their duty.

The chief of the department of hydrophobia is Professor Grancher, of the Paris Faculty of Medicine.

Two physicians assist Professor Grancher; they are Dr. Chantemesse, physician of the Paris Hospital, who has drawn attention, during these past years, especially to his researches on the microbe of typhoid fever, and Dr. Charrin, chief of the General Pathological Laboratory of the Faculty of Medicine. Two surgeons are also attached to the same Institute, Prof. Terrillon, of the Faculty of Paris, and Dr. Drengueber, surgeon of the Paris Hospital.

Every day, for the use of the department of hydrophobia, about ten rabbits, ten guinea-pigs, and two or three dogs are sacrificed in the preparation of the virus. The way in which the inoculations are made as well as the preparation of the virus, we shall relate, hereafter, in another letter.

Department of General Bacteriology.—This department is devoted to the general study of microbes, pathogenic, and non-pathogenic; the chief of this department will be Prof. Duclaux, one of the first students of Pasteur; he is to-day professor of biological chemistry at the Sorbonne, and his chair is now transferred, by order of the Secretary of Public Instruction, to the Pasteur Institute.

Department of Medical Bacteriology.—This department has been divided into two sections.

1st. Section of Methods. In this section the pathogenic microbes will be especially studied—all those that contribute to the etiology of contagious and virulent diseases, such as tuberculosis, typhoid fever, diphtheria, measles, scarlatina, pneumonia, cholera, etc. The chief of this section will be M. Roux, a well-known student of Pasteur, to whom he has rendered very great services during his studies of hydrophobia.

2d. Section of Research. This second section will be under the direction of M. Gamaleia, of the microbiological laboratory at Odessa, who lately has become well known by his researches on the vaccine of Asiatic cholera; he is of Russian nationality.

The *Department of Morphological Bacteriology*, whose specialty will be the study of the natural history of microbes, is also under the direction of a well-known Russian, M. Metschnikoff, director of the bacteriological institute at Odessa.

The *Department of Bacteriology applied to Hygiene* will be under the direction of M. Chamberland, another well-known student of Pasteur, who took a large part in the researches of his master on the carbuncle vaccinations.

It is hardly necessary to add that the above laboratories are open, free of charge, to all who desire to come to study. Two sorts of laboratories will exist in each of the above departments:

1st. A laboratory of study for the physicians who shall come to acquire a sufficient knowledge of bacteriology, which will enable them to practise their profession more in accordance with the present state of medical science.

2d. A laboratory of research for those who have already a general knowledge of bacteriology.

PARIS, November 16, 1888.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

(From our Special Correspondent.)

THE Sixteenth Annual Meeting of the American Public Health Association just held at Milwaukee, brought together a large number of representative sanitarians and health officers, to consider some of the most important subjects that can be presented to public and professional attention. While papers and reports on other subjects were not excluded, the Executive Committee had designated as the subjects for discussion and elucidation: I. The Pollution of Streams; II. The Disposal of Refuse Matter of Cities; III. Animal Diseases Dangerous to Man; and IV. Maritime Quarantine and Regulations for the Control of Communicable Diseases.

The first meeting was held on November 20th at Athæneum Hall. The Report of a Committee on the Pollution of Water Supply, by Surgeon Charles Smart, of the Army, as Chairman, well introduced the series of papers and reports to follow. It was an able presentation and summary of the reasons why the pollution of streams and other bodies of water was not consistent with their use for potable water. The report argued against reliance on methods of chemical purification, and while admitting the improvement of sewage by dilution, aëration, etc., it contended that this did not assure a satisfactory purity.

The paper went on to show at length that although aëration doubtless did measurably promote the oxidation of organic matter under such and similar circumstances, yet the very process which, through the production of ammonia, led to its nitrification, was the concomitant, not to say the breeder and nurser, the propagator and multiplier of the various bacteria and bacilli which are known to be the causes of malarial, typhoidal, and other epidemic diseases. And it was furthermore shown that neither the stagnation of "settling basins," as at St. Louis, nor yet the huge filters of Atlanta remedied this, the real evil. For it is neither the stench nor even the discoloration which is the true index of a given water-supply's impotability, from a sanitary standpoint. Homœopathic dilution can get away with the former; alum, iron, lime, and other precipitants can, with filtration, produce water of crystalline purity to the naked eye; but neither method can starve or coagulate the lively bacterium into innocuous desuetude. Dr. Smart, therefore, held with the English authorities: "Rivers which have received sewage, even if that sewage has been 'purified' before its discharge, are not safe sources of potable water."

There was no recognition of the facts shown by Percy Frankland and confirmed by others, as to the rapid elimination of bacteria under methods of chemical purification and aëration. The paper was able and well represented the views of those who take the high, safe ground that all forms of sewage must be excluded from every water supply used for drinking purposes. But it scarcely gave due credit to facts, just as well established, which go to show that where such a perfect supply cannot at once be made available, great benefits can be derived from the intervention of long distances of flow and from artificial methods of aëration and purification. We are, nevertheless, glad to have the perfect ideal held up, since the sin of using bad water is one of the vices of

cities. The report was well discussed by Prof. Vaughan, Prof. Rohé, Dr. H. P. Walcott, and others.

The Presidential Address of Dr. C. W. Hewitt, of Minnesota, in the evening, was characteristic, desultory, impulsive, assertive, it was in many respects suggestive and practical. With pointed emphasis, he outlined the details of sanitary administration. Especial stress was laid on the need of daily, practical, and, so to speak, petty activity of health officers, so that by clearing away minor abuses, one by one, and preparing for larger exigencies, panics may be avoided. Practical suggestions were made as to many of these details. As the address of Surgeon Sternberg last year presented the more scientific basis of sanitary work, this address was representative of those who salute themselves as practical, administrative sanitarians, and look with only patronizing consideration upon those who study deeper the problems of life, and yet do not forget to proceed effectively to administrate in accord with both knowledge and experience. Both have their sphere of usefulness and both, in time, come to the point in a working association like this.

The well-known opposition of Dr. Hewitt to the National Board of Health did not prevent him from recognizing the desirability of some restricted form of national health power. He urged "the need of a more intelligent and far-seeing—that is to say, a less red-tape and offensively centralized—co-operation and independence of local, state, and national health boards; insisting that the first was the integral unit, and that the last should properly be evolved out of the demonstrated and experienced needs of the second. In other words, that the highest efficiency of local boards, rural as well as urban, is of the last consequence, and that the true function of the national board should, on the one hand, be to facilitate and cement the interdependent helpfulness of the state boards among one another; and, secondly, to provide for a thorough extra-national system of sanitary inspection in connection with our consular system.

A paper by Dr. Crosby Gray, Health Officer of Pittsburgh, was valuable, because it gave the results of a very careful topographical, chemical, and biological examination into the cause of a six per cent. higher death-rate of the south side of that city. He traced it to the water supply of that part of the city, as drawn from the Monongahela River, which receives a vast amount of pollution. He reckoned the loss to the city during the past year at \$480,000, as based on accurate statistics of cases as given.

Dr. H. B. Baker, presented remarks on the classification of diseases, in which he took exception to present methods and thought that if the bacteriologist would present a classification from his stand-point, and so the meteorologist, the chemist, and the etiologist, we would have valuable material for a re-classification.

The paper of Dr. Kilvington, of Minneapolis, was a valuable *résumé* of the experiments thus far had as to burning garbage, excreta, etc., by means of furnaces. The matter was before the Association last year, and many details given as to a score or more of such crematories in England and that of Mann, so successfully used in Montreal. To these he added accounts of the Milwaukee Destructor; the Rider Destructor, of Pittsburg; and the Engel, at Minneapolis, also in use at Des Moines. We have had occasion in the past year to examine the evidence as to the feasibility of this mode of refuse disposal, and feel sure that it will be found available in

many of our cities. The Association made an examination of the one at Milwaukee, which has recently been considerably changed in order to use some more modern improvements devised by Mr. Forrestal. Dr. De Wolf, Health Officer of Chicago, while approving of this method, also drew attention to the Buffalo Distillery Crematory, which extracts lubricating oils in the process of burning, and so in part pays expenses.

As a matter of course, quarantine came in for its full share of attention. Dr. Rauch discussed chiefly land quarantine, and repeated the substance of his essay before the Illinois State Board. He made a practical application of it to yellow fever, and denounced the exclusion of refugees. He did not prove his assertion "that a continuous temperature of not less than 70° F. is necessary for its origin and spread." While it is well recognized that it is a disease of warm climates, it is not safe to assert that persons having contracted the fever cannot have it and be the centres of an epidemic, without a continuous temperature of over 70° F. Even were this so, there is not a city in the Middle States that does not for days reach this and not infrequently in September. There was much of value in the paper after it had been thoroughly sifted by the best authorities in the Southern States who have fought, not at long range, this fearful scourge.

Dr. Rutherford, Health Officer for the State of Texas, and Col. Hadden, of Memphis, ably defended their methods of quarantine, and well disputed the position taken by Dr. Rauch.

An excellent paper was presented by Dr. Jerome Cochrane, the Health Officer of Alabama, from a recent, though oft-repeated, experience. He claimed yellow fever as a communicable disease, requiring most thorough methods of isolation in the hands of a thoroughly equipped local board. He would resort to depopulation and refugee camps only on the careful judgment of the local health authorities, as such removal, although theoretically good, is often impracticable.

Papers of merit were presented by Mr. Payne, of the Signal Service, on "Climatology and Health;" and by Dr. A. W. Bell on "Sanitary and Medical Service on Immigrant Ships."

Dr. D. E. Salmon, of the Bureau of Animal Industry, read a valuable paper on "Tuberculosis," showing that the two chief sources of supply were the floating and dried materials from diseased lungs and the use of the milk and flesh of tuberculous cattle.

A paper by his assistant, Dr. Theobald Smith, of Washington, "On the Origin and Sources of Disease Germs" was a valuable contribution to bacteriology.

The Lomb prize for the best paper on "Five Food Products Illustrated by Practical Receipts" was awarded to Mrs. Mary J. Hinman, now in attendance at the University of Strasburg. Seventy essays were presented.

While there were some local defects of arrangement and the attendance was not so large as at some previous meetings, some valuable papers and discussions were furnished.

The next annual meeting will be held at Brooklyn, N. Y.

MILWAUKEE, November 23, 1888.

THE CERTIFICATION OF A PATIENT'S DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: A question has recently come before me involving certain relations and rights between doctors and their patients, that I should like to lay before you and your readers for further information, if it should be thought worthy of consideration. I must confess that I feel surprised to find myself in so small a minority.

The Medical Association of the District of Columbia is a voluntary body, composed of all the medical practitioners of the district who are in good standing, and deals with questions of ethics alone. The resolution embodied in the circular quoted below was adopted at a recent meeting by a vote of 21 to 4.

The circular reads as follows (as it is in print and sent to all the members, it is, of course, in no sense a confidential communication):

"My Dear Doctor: At an adjourned meeting of the Medical Association of the District of Columbia, held the evening of the 13th inst., Article XXVII. of the regulations was so amended as to read as follows, viz:

"Article XXVII.—In certificates on account of illness given to employés in the public offices, or others, respecting absence from official duties, the disease shall not be specified; neither shall the name or nature of the disease be divulged by any written description or statement of its symptoms given to the patient himself, nor by any specification of the disorder, nor by any disclosure which may be construed into an evasion of the meaning of this regulation."

"I am directed by the Association to forward a printed copy of the above article, as amended, to each member."

—Signed by the Secretary.

In considering this article the question is not whether in giving certificates of any kind to a third party, the doctor shall state the nature of the disease under which the patient is suffering; although this question is open to consideration—in cases of life insurance, etc., where the patient himself desires it, or under other peculiar circumstances. A case in point has recently occurred where a patient desired, and deserved, relief from duty on the petit jury; he was given a doctor's certificate that he was suffering from a disease which disabled him from jury duty. As no further particulars regarding the disease were given, he was retained on the jury and, when locked up with his eleven associates in a case requiring long consideration, sent to his physician for a more explicit certificate. In reply, a personal letter was sent to him, stating that he was suffering from a form of *itch* which was contagious.

In considering this article the question is not whether the doctor shall disclose or withhold, under any circumstances, details prejudicial in any way to the patient; but simply as to whether the doctor is not bound, as a business transaction, to give a patient by word of mouth or in writing, such details as the patient may ask for regarding the nature of his disease, to do with as the patient may see fit. If the patient can prove that such a refusal is prejudicial to his welfare, pecuniary or otherwise, may the patient not obtain satisfaction by a process of law?

The causes which led to the passage of the article in question have nothing to do with the question involved, but it may be worth while to refer to them. It will be

noticed that the application is made only to public official duties. The government departments have pretty generally adopted a rule requiring the nature of the disease to be stated in all certificates for absence on account of sickness, thus casting discredit on the physician's statement of simple disability, compelling references to morbid conditions which are either not creditable, or, as in the case of women, of whom so many are in these departments, are of a nature not suitable to be made a matter of record or discussion in public offices; or compelling the physician to disregard truthfulness in the interest of his patient, and to make use of a politic evasion—in other words, to lie about it. The latter is evidently distasteful to the members of the Association, so they have made this issue. I sympathize fully with my colleagues, but I do not see how they can maintain the position they take in this Article XXVII.

Yours very truly, L.

WASHINGTON, D. C.

NEWS ITEMS.

A Long Distance Consultation by Telegraph.—The Canadian Pacific telegraph was last Sunday week brought into service in a way that not only afforded a good illustration of the extent of the system, but furnished a unique example of the possibilities of modern science.

Lord Ennismore, heir to the Earldom of Listowel, is lying at the point of death in the hospital at Victoria, British Columbia, with typhoid fever, accompanied by other complications. A telegraphic circuit was formed from London to Victoria, by the Mackay-Bennett Cable and Canadian Pacific Railway telegraph, and Sir Andrew Clarke, of London, was placed in direct consultation with Dr. Hannington, in Victoria. A conversation lasting three hours, concerning Lord Ennismore's condition, was carried on.

An unbroken circuit was worked from Victoria to the cable office in New York where the telegrams were repeated to London. Replies were received in three and four minutes. Lord Ennismore, though still in a dangerous condition, is reported as somewhat better.

Influenza.—This malady, known in France as the *grippe*, is just now epidemic in London, and possibly elsewhere in the British Isles. It is quite distinct from the ordinary "cold in the head," to which it stands in much the same relation as cholera does to summer diarrhoea. It is not, strictly speaking, infectious, although it occurs in epidemic form. The victims are stricken down simultaneously, often by hundreds and even thousands. The first great epidemic occurred as far back as 1580, and spread all over Europe. Since that time epidemics have broken out at irregular intervals, differing only in extent from their mediæval predecessors.

The most marked feature of this really redoubtable, though not necessarily fatal, malady is the intensity of the nervous phenomena, and the prostration which it leaves behind. It is related that some years since the entire crew of a man-of-war cruising in the Channel were incapacitated within a few hours to such an extent, and with such impartiality, that the vessel had to hoist signals of distress and obtain assistance to navigate it. When it invades a town, the disease does not, as with infectious

maladies, start from a limited area, but conquers the whole population at one fell swoop. The rapidity with which it travels is also remarkable. The epidemic of 1847 in one month skipped from Spain to Newfoundland, and from New Zealand to Valparaiso, Syria, Africa, and even to Hong Kong. It usually travels from east to west, but does not appear to obey any general law, and although in some instance outbreaks have seemed to be consequent on sudden changes of temperature, they have supervened in all seasons and in all climates.

Apart from the ordinary symptoms of catarrh, respiration is often extremely embarrassed, and sometimes death results from positive "paralysis of the lungs." This interference with the pulmonary function may perhaps explain the prostration which persists long after the principal symptoms have disappeared, and incapacitates the sufferer from work for a period of time varying from one to three weeks. It is comparatively rare in England in its aggravated form, and therefore often gives rise to unnecessary alarm.—*Medical Press*, October 24, 1888.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 20 TO NOVEMBER 26, 1888.

MCCLELLAN, ELY, *Major and Surgeon*.—Having reported to the Division Commander, on the 23d inst., as required in par. 15, S. O. No. 261, current series, A. G. O., is assigned to duty as Attending Surgeon at these headquarters, and as examiner of recruits at Chicago, Illinois, from that date.—*Headquarters Division of the Missouri, Chicago, Illinois*, November 24, 1888.

By direction of the Secretary of War, leave of absence for four months is granted RICHARD C. NEWTON, *Captain and Assistant Surgeon*.—Par. 16, S. O. 272, A. G. O., Washington, November 21, 1888.

By direction of the Secretary of War, the leave of absence granted JOHN VAN R. HOFF, *Captain and Assistant Surgeon*, in S. O. No. 134, November 1, 1888, Department of the Missouri, is extended one month.—Par. 3, S. O. 274, A. G. O., Washington, November 23, 1888.

By direction of the Secretary of War, the leave of absence granted MARSHALL W. WOOD, *Captain and Assistant Surgeon*, in Special Orders No. 257, November 3, 1888, from this office, is extended ten days.—Par. 12, S. O. 270, A. G. O., Washington, November 19, 1888.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING NOVEMBER 24, 1888.

HEFFINGER, A. C., *Passed Assistant Surgeon*.—Ordered to the U. S. S. "Kearsarge."

BRYANT, PATRICK H., *Assistant Surgeon*.—Ordered to the Naval Hospital, Brooklyn, New York.

McMURTRIE, DANIEL, *Surgeon*.—Ordered to the U. S. Receiving Ship "Vermont."

DRENNAN, M. C., *Surgeon*.—Detached from the "Vermont," and ordered to the "Atlanta."

WINSLOW, G. F., *Surgeon*.—Detached from the "Atlanta," and placed on waiting orders.

McCLURG, W. A., *Passed Assistant Surgeon*.—Detached from the "Tallapoosa," and ordered to the "Kearsarge."

VON WEDEKIND, L. L., *Assistant Surgeon*.—Ordered to the "New Hampshire."

HEFFINGER, A. C., *Passed Assistant Surgeon*.—Detached from the "Kearsarge," and ordered to the "Tallapoosa."

STEPHENSON, B. F., *Surgeon*.—Detached from the Navy Yard, Boston, and ordered to the "Wabash."

OBERLY, A. S., *Medical Director*.—Ordered to the U. S. S. "Richmond."

JONES, W. H., *Surgeon*.—Detached from the U. S. S. "Richmond," and placed on waiting orders.